

subsequent episode in their history or century in time. The description of the effect of the poison is especially suggestive of the Seri; as pointed out on a later page, the Seri arrow-venom is magical in motive, but actually consists of decomposing and ptomaine-filled organic matter, so that it is sometimes septic in fact, while the arrow-poison of the neighboring Opata, Jova, and other Piman tribes was (so far as can be ascertained) vegetal; and these accounts seem to attest septic poisoning rather than the effects of any known vegetal toxic.¹ [171] [172]

Such (assuming the validity of the several identifications) are the earliest records concerning the truculent tribesmen and the desolate district known centuries later as the Seri and Seriland.

About 1545 began the Dark Ages in the history of northwestern Mexico; the excursion of Guzman, and the journeys of Cabeza de Vaca and Friar Marcos and of Coronado himself, died out of the memory of the solitary adventurers and scattering settlers who slowly infused Spanish culture and a strain of Caucasian blood into the Sonoran province; even the route taken by Coronado's imposing cavalcade was lost for centuries, to be retraced only during the present generation, largely through the determinations of Simpson, Bandelier, Winship, and Hodge.² It is true that Don Francisco de Ibarra penetrated the territory in 1563, and remained until rumors of gold in other districts drew him elsewhere; it is also true that Captain Diego Martinez de Hurdaide pushed into the province in 1584, and entered on a career of subjugation, waging persistent war with the Yaqui, which resulted in the acquisition of the territory of Sonora by treaty April 15, 1610;³ yet few records of exploration or settlement were written before the advent of the Jesuit missionaries, toward the end of the seventeenth century. [114]

Still more astounding was the eclipse of knowledge of the gulf. Despite Ulloa's survey of the entire coast, recorded in an itinerary so detailed that every day's sailing may readily be retraced, and despite Alarcón's repetition of the surveys and extension of the discoveries far up Rio Colorado (where his work was verified by that of Melchior Diaz), a mythic cartography arose to shadow knowledge and delude exploration for a century and a half; for "upon the authority of a Spanish chart, found accidentally by the Dutch, and of the authenticity of which there never were, or indeed could be, any proofs obtained, an opinion prevailed that California was an island, and the contrary assertion was treated even by the ablest geographers as a vulgar error";⁴ and a mythic strait formed by cartographic extension of the Gulf of California indefinitely northward haunted the maps of the seventeenth century. This error was adopted by various geographers, including Fredericus [114] [175]

¹ It should be noted that Mr. F. W. Hodge, whose large acquaintance with the Southwest and its literature gives his opinion great weight, is inclined to class the Indians in question as Opata. [114]

² *Op. cit.*, pp. 22-23.

³ *Sonora Histórica y Descriptiva*, por F. T. Dávila, 1894, p. 2.

⁴ *A Natural and Civil History of California*; translated from the original Spanish of Miguel Vaganes; London, 1796, vol. 1, preface. [113]

F. R. Grossmann defines the term "ser, very, ad. (prefix)", and over a hundred and fifty of his terms illustrate the use of this adjectival or adverbial prefix as an undifferentiated yet vigorous intensive (e. g., *ser, female or woman, ser-ser, a lady—great or grand woman; ser-ek, high or height, ser-ser-ek, highest*); and in the Pimentel vocabulary this signification is attested by several other terms (e. g., "*Serrani, jumo menmle y bueno*"). Finally, the intercalated consonant *r* is a common participial element in the Piman, while the suffix *ai* is a habitual assertive termination, as shown by various terms in the Pimentel and other vocabularies. Dropping this termination, the expression becomes *ser-er, or—without the nonessential participial element—or err, signifying (so far as can be ascertained from the construction of the language) "moving", or "mover", qualified by a vigorous intensive.* To one familiar with the strikingly light movement characteristic of the Seri—a movement far lighter than that of the professional sprinter or of the thoroughbred "collected" by a skilful equestrian, and recalling that of the antelope skimming the plain in recurrent impulses of unseen hoof-touches, or that of the alert coyote seemingly floating eerily about the lumbering camp—this appellation appears peculiarly fit; for it is the habit of the errant Seri to roam spryly and swiftly on soundless tiptoes, to come and go like fleeting shadows of passing ebullients, and on detection to slip behind shrub or rock and into the distance so lightly as to make no audible sign or visible trail, yet so fleetly withal as to evade the hard-riding horseman. The Seri range over a region of runners: the Opata themselves are no mean racers, since, according to Velasco and Bartlett, "In twenty-four hours they have been known to run from 40 to 50 leagues";¹ and, according to Lambertz, their collinguals, the Tarahumari, or "Counting-Runners", are named from their custom of racing,² and display almost incredible endurance:

An Indian has been known to carry a letter from Guaymas to Chihuahua and back again in five days, the distance being nearly 600 miles. In some parts where the Tarahumari serve the Mexicans they are used to run in the wild horses, driving them into the corral. It may take them two or three days to do it, sleeping at night and living on a little pinole. They bring in the horses thoroughly exhausted, while they themselves are still fresh. They will outrun any horse if you give them time enough. They will pursue deer in the snow or with dogs in the rain for days and days, until at last the animal is cornered and shot with arrows or falls an easy prey from sheer exhaustion, its limbs dropping off.³

¹The latter form (*ser-er*) corresponds perfectly with the current Papago pronunciation of the term, though none of the various Papago informants consulted were able to interpret the expression; indeed, they simply relegated it to the category of "old names" which they deemed it needless to discuss. An archaic form of orthography, noted in the *synonymy* (pp. 128-129), is *Serri*, which suggests the same meaning of the initial consonant.

²From 165 to 170 miles: Bartlett, *Personal Narrative*, vol. 1, p. 545.

³Minutes of the International Congress of Anthropology, Chicago, 1900, p. 104. In a letter to Mr. F. W. Hodge, under date of September 11, 1900, Dr. Lambertz says: "After renewed consideration I have come to another opinion regarding the meaning of the tribal name *Tarahumara*. This word is a Spanish corruption of the native name '*Rahamari*'. Though the meaning of this word is not clear, that much is certain that *raha* or *rah* means 'fast', and I therefore take it that we must be at least approximately correct when we say that the word signifies 'fast runner'."

⁴American Anthropologist, vol. VII, 1902, p. 67.

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481 The Papago, of the same region and linguistic stock, have a racing game in which a ball of wood or stone caught on the foot is thrown, followed, and thrown again until the two or more rival racers have covered 20 to 40 miles in the course of a few hours; and their feats as couriers and trailers are quite up to those of the Opatas. Yet among all these tribes, and among the Mexicans as well, the Seri are known as the runners par excellence of the Sonoran province; and it is but natural that their astounding swiftness and lightness of foot should have brought them an appellation among contemporaries to whom these qualities peculiarly appeal.

101 Accordingly, both derivation and connotation give meaning to the name, and warrant the rendering (much weakened by linguistic infelicities) of "apry" or "apry-moving", used in substantive sense and with an intensive implication.

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197 The chronicles of the tribe, especially those written during the seventeenth and eighteenth centuries, indicate that the alien designation was applied loosely and with little appreciation of the tribal organization, just as was the case elsewhere throughout the continent. Gradually the chroniclers took cognizance of intertribal and intratribal relations, and introduced various distinctions in nomenclature expressing tribal or subtribal distinctions of greater or less importance. One of the earliest distinctions was that between the Seri and the Tepoka, and this distinction has been consistently maintained by nearly all later authorities, despite the commonly accepted fact (brought out most authoritatively by Harly: that the tongues of the tribes are substantially alike. Another early distinction was that made between the Seri and the Guaymas; it was based primarily on diversity of habitat and persistent enmity, though all the earlier authorities agreed, as well shown by Ramirez, that the tongues were essentially identical. The distinction has been maintained by most authorities and strongly emphasized by one Pinart, as quoted by Handeller, and since the Guaymas are extinct, and hence beyond reach of direct inquiry, the early interpretation of tribal relation must be perpetuated. Still another distinction was that made between the Upanguaymas and the Guaymas, and inferentially the Seri also; although the grounds for this distinction were not specifically stated, it seems to have grown out of diversity in habitat merely; but there were clear implications that the tribe or subtribe was affiliated linguistically with the Guaymas, and hence with the Seri, and this assignment has been adopted by leading authorities, including Pinmental and Orozco. Among the earlier distinctions based on indus-

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175 In view of the clear indications, both a priori and a posteriori, that the latest Guaymas survivors must have taken the language of the Piman (Vasqui) tribesmen with whom they found refuge, and in view of his failure thus far to present his data for public consideration, M. Pinart's inference that the Guaymas belonged linguistically to the Piman stock can hardly be admitted to hold against the explicit statements of the Jesuit missionaries and such accomplished inquirers as Ramirez and Pinmental.

is at least partially counterbalanced by conspicuous biotic characters, such as color, stature, etc., so distinctive as almost to seem specific: the Seri are distinctively dark-skinned, their extreme color-range (as far as known) being less than their nearest approach to any neighboring tribe; they are nearly as distinctive in stature, the difference between their tallest and shortest normal adults being apparently less than that between their shortest and the tallest of the neighboring Papago—though they are not so far from the more variable and often tall Yaqui; and they appear to be no less distinctive in such physiologic processes as those connected with their extraordinary food habits. Still more distinctive are the demotic characters connected with their habits of life and modes of thought; and when the sum of biotic and demotic characters is taken, the Seri are found to be set apart from all neighboring Sonoran tribes by differences much more striking than the individual range among themselves.¹

It is especially noteworthy that the Seri have held aloof from that communality of the deserts which has brought so many tribes into union with each other and with their animal and vegetal neighbors through common strife against the common enemies of sun and sand—the communality expressed in the distribution of vital colonies over arid plains, in the toleration and domestication of animals, in the development of agriculture, and eventually in the shaping of a comprehensive solidarity, with the intelligence of the highest organism as the controlling factor.² Dwelling on a singularly prolific shore, the Seri never learned the hard lesson of desert solitariness, but looked on the land merely as a place of lodgment or concealment, or as a source of luxuries such as cactus tunas, mesquite beans, and tasty game; they never formed the first idea of planting or cultivating, and their only notion of harvesting and storing against time of need was the intolerably filthy one of nature's simplest teaching; they apparently never grasped the concept of cooperation with animals, and came to tolerate the parasitical coyote only in that its persistence was greater than their own, and in so far as it was stealthy enough to hide its travail and the suckling of its young against their ravening maws; and they apparently never rose to real recognition of their own kind in alien forms, but set their hands against agricultural and zoo-cultural humans as peculiarly potent and hence especially obnoxious animals. Naturally their racial intolerance was seed of battle and blood-feud; and they would doubtless have melted away under the general antagonism but for the natural barriers and unlimited food of their restricted domain.

At present, as for the later and best-known decades of their history,

¹It seems probable that the Seri were nearer to tribes of southern Baja California than to those of Sonora at the time of the earliest explorations, yet that the distance was sufficiently strong to warrant the extension of the proposition to these tribes also.

²The Beginning of Agriculture, *American Anthropologist*, vol. VII 1905, p. 226. The Beginning of Zoo-culture, *ibid.*, vol. X, 1907, p. 495.

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THE PAINTED OLLA

1759

and the shell-strata are so like and so different from any other fetilla⁴¹⁵ were as to be distinguished at a glance. Hence it would seem manifest^[172] that the Seri olla must constitute a normal nucleus for the Seri esthetic; yet even here the field is practically barren, as is shown by the study of⁴¹⁵ a score of usable and mortuary specimens and of thousands of sherds.⁵³¹ The most ornate specimen seen is that depicted in plate XXXII. Its form, like that of the balua, is a mechanical equation of forces and materials; its body-color is that of the clay, blotched and blackened irregularly by the smoke of the firing; and its decoration is limited to 17 faint lines or bands radiating downward from the H-shaped neck. The radial bands were evidently drawn by a finger dipped in clayey water after the vessel was otherwise finished for the firing; they are irregular in placement, width, length, and direction; they generally run in pairs, two straight lines alternating with two zigzag lines, though the circuit is completed by two zigzags drawn wide apart and separated by a single straight line. The meaning of the device (if meaning there be) was not directly ascertained; but it is suggestive that its maker and owner was the mother of the youthful warrior from whom the rattle-snake necklace was obtained (her face-symbol is that shown in the lower left figure of plate XXVI), and that the vessel was surrendered more reluctantly than any other article obtained from the tribe.

Another utensil of some importance to the tribe is a basket of the⁴¹⁵ type illustrated in figure 24. It is manufactured with much skill^[285] and is used for various domestic purposes, being practically water-tight and unbreakable, and materially lighter than even the unparalleledly light fetilla ware of the Seri. In form and size and weave the half dozen examples seen correspond with widespread southwestern types; yet it is noteworthy that while otherwise similar baskets are habitually decorated^[171] by other basket-making tribes, the Seri specimens were absolutely^[531] devoid of decorative devices.

Practically the only remaining artifacts available for decoration are⁴¹¹ those connected with archery; and it suffices to say that while the bows⁵³¹ are skillfully made and the arrows constructed with exceeding pains, not a single specimen seen showed the slightest trace of symbolism or of nonutilitarian motive.

Summarily, the Seri are characterized by extreme esthetic poverty. This has been noted by the early missionaries and by the few other travelers who have approached their haunts, as well as by the vaqueros on the Encinas and Serus and other ranchos bordering their range, who know them as "los pobrecitos". All observers have been struck with their destitution and squalor; yet when the impressions are particularized they are seen to denote absence of the poor luxuries, rather than the bare necessities, of primitive life. The people are pathetically poor in the industrial sense; their equipment in artifacts—implements, weapons, utensils, habitations, apparel—is meager almost, if not quite, beyond parallel in America; yet their esthetic equipment, practically

517 limited as it is to a single line of symbolic portrayal, is still more abjectly meagre.

● [171] Any comparison of the Seri esthetic with that of other Amerind tribes serves only to emphasize its paucity: the tribes of the plains, with their eagle-feather headdresses, elaborately arranged scalp-locks, widely varied face-painting, and ritualistic camp circles; the Pueblo peoples, with their ornate masks, elaborate altars, figured stuffs, and painted pottery; the denizens of the eastern woods, with their feather-decked peace-pipes, divinatory games, fringe-bordered garments, and prayer-inscribed arrows; the coastwise peoples of the upper Pacific, with their labrets and tattoo-marks, totem-poles and carved house-fronts, painted canoes and prodigal patchworks; the neighboring desert tribes, with their fustal footraces, decorated pottery and basketry, pendent scarfs and garters, and well-wrought caskets for family fetiches; even the timid acorn-eaters of California, with their sacramental baskets, artistically befringed kilts, bead-strings of far-traveled snare, and patiently wrought fabrics of rare feathers—all of these seem rich in esthetic motives when contrasted with "los pobrecitos" of arid Seriland. And the contrast is only intensified when the economic motives of the various tribes are compared: the industrial motives of the Seri are fairly numerous and diverse; they are skillful huntsmen, successful fishermen, capable navigators, and competent warriors (as attested by the protection of their principality for centuries), so that despite the absence of agriculture and the avoidance of commerce, their industrial range is not very far below the aboriginal average; and while they are deficient in thrift, this shortcoming is balanced by a peculiarly developed vital economy whereby they are delicately adjusted to their environment, as has been already shown. On the whole, it would appear that the Seri are not only lower in esthetic development than the contemporary tribes thus far studied, but also that they stand at the bottom of the scale in the ratio of esthetic to industrial motives.

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THE SIGNIFICANCE OF DECORATION

000 Largely through recent researches among the American aborigines, it has been shown that decorative and many if not all other esthetic concepts normally arise in symbolism, gradually expand in conventionalism, and eventually mature in a realism which is itself the source of ever-extending esthetic motives; and the observations on the lowly Seri afford opportunity for somewhat extending the generalizations based on higher tribes.

When peoples of unequal cultural development are compared, it is commonly found that the higher are the more independent in action and thought: thus, advanced peoples make conquest of nature for their own behoof, while primitive peoples are largely creatures of environment; Caucasian citizens are self-conscious lawmakers, while Amerind tribesmen are semiconsciously dominated by mysteries fearfully

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THE SERI INDIANS

[1898, APR. 17]

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extensive rancheries near Punta Narragansett measure 10 miles by trail from the same aguaje; the half dozen jacales about Campo Navidad are separated by some 15 miles of stony and hilly pathway from the alternative watering places of Tinaja Anita and Arroyo Carrizal;¹ and the huts crowning the great shell-heap of Punta Antigualla—one of the most striking records of immemorial occupancy in America—are nearly or quite 10 miles by trail from Pozo Escalante, and still further from Aguaje Parilla, the nearest sources of potable water. These are but typical instances; and while there are ruined huts (evidently regarded as temporales) near the dead waters of Barranca Salina and Pozo Escalante, they tell the tribal policy of locating habitations in places surprisingly remote from running water. Like other desert folk, the Seri have learned to economize in water-carrying by swigging incredible quantities on their occasional visits to the aguajes; it is probable, too, that their systems are insured, somewhat as are those of the desert animals that survive deprivation of water for days or months, to prolonged abstinence from liquid food; yet it seems safe to assume that at least half of the water required in their vital economy (say 2 or 3 pounds apiece daily, on an average) is consumed after transportation over distances ordinarily ranging from 4 to 13 miles. Under these conditions the Seri have naturally produced a highly developed water industry; they are essentially and primarily water-carriers, and all their other industries are subordinated to this function.

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Concordantly with their customs, the Seri have a highly differentiated aquarian device in the form of a distinctive type of olla, which is remarkable for the thinness and fragility of the ware, i. e., for largeness of capacity in proportion to weight. Representative specimens are illustrated in plates XXXII and XXXIII (the former painted, as already described). The dimensions of the two vessels are as follows: painted olla, height 34 cm. (13½ inches), mean diameter 32.5 cm. (12¾ inches); plain olla, height 32 cm. (12½ inches), mean diameter 32 cm. In both specimens the walls are slightly thickened at the brim, those of the painted vessel measuring about 4 mm. and those of the plain vessel about 4.5 to 5 mm. in thickness. Below the brim the walls are thinned to about 3 mm., as is shown in the fractured neck of the painted specimen. The capacity of these Seri vessels in proportion to their weight, compared with that of typical examples of ware produced by other desert peoples, is shown in the accompanying table.

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Comparison of the mean ratios indicates that the Seri ware is almost exactly twice as economical as that of the P'ueblos—i. e., that its capacity is twice as great in proportion to the weight of the vessel; and that

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¹ The precariousness of water in this hard province was impressed in the 1895 expedition, during which the cost of the commodity, reckoned on the basis of the time and labor involved in obtaining it, was estimated at \$10 or \$12 per gallon, or about the wholesale price of the finest champagne.

1898]

LIGHTNESS OF SERI OLLAS

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even the ware of the wide-wandering Papago is more extravagant than that of the Seri in the ratio of 100 to 54. It is noteworthy, too, that the typical Seri ware is much more uniform than that of the other tribes; the various specimens seen in use at Costa Rica, and nearly entire in various parts of Seriland, were closely similar in form and nearly alike in dimensions; while the innumerable smaller fragments scattered over Seriland and the neighboring "despoblado" or buried amid the shells of Punta Antigualla correspond precisely in thickness, in curvature, in material, and in finish with the ware observed in use.

Neither the manufacture of the ware nor the sources of material have been observed by Concasians. Examination of the specimens indicates that the material is a fine and somewhat micaceous clay, apparently an adobe derived from granitoid rocks; and such material might be

Ratio of capacity to weight among Indian ollas:

	Capacity	Weight	Ratio	Mean ratio
Seri:	Liters	Kilograms		
Plain	15.14	1.91	0.136	0.137
Painted	15.61	2.50	.147	
Papago:				
No. 1	17.05	4.08	.239	.263
No. 2	8.51	2.28	.279	
Si	15.14	3.82	.252	.271
Zahl	12.30	3.18	.256	
Acous	15.61	4.21	.276	
Hopi	13.72	4.06	.285	

obtained in various parts of Seriland. The structure of the ware reveals no trace of coiling or other building process, nor does the texture clearly attest the beating process employed by the Papago potters; but there is a well-defined lamellar structure, and the surfaces (especially inner) are striated circumferentially or spirally in such manner as to suggest a process of rubbing under considerable pressure. All the specimens are so asymmetric as to indicate the absence of mechanical devices approaching the potter's wheel, while the necks are of such size as to admit the hand and forearm of an adult female but not of a warrior. Some suggestion of the manufacturing process is afforded by miniature fetishistic and mortuary specimens, such as those depicted in figures 17 and 18, and the larger specimens shown in figure 39, which were evidently shaped from lumps of suitable clay first hollowed and then gradually expanded by manipulation with the fingers, with little if any aid from implements of any sort. On putting the various indi-

*In this table the ratio is expressed by the weight in kilograms for each liter in capacity. The Papago and Pueblo specimens were selected from typical material in the National Museum and at random, save that in the Pueblo case choice was made of specimens corresponding approximately in size with those of the Seri.

dishes, or even as kettles, in the rare colinary operations of the tribe (as shown in plate X); but the entire vessels appear to be religiously devoted to their primary purpose. 415

While some three-fourths of the observed fictile ware of the Seri and a still larger proportion of the scattered sherds represent conventional ollas, there are a few erratic forma. The most conspicuous of these is a smaller, thicker-walled, and larger-necked type, of which three or four examples were observed; two of these were in use (one is represented lying at the left of the jacal in plate X), and another was found cracked and abandoned on the desert east of Playa Noriega. The vessels of this type are used primarily as kettles and only incidentally as can-
teens. In both form and function they suggest accultural origin; but the ware is much like that of the conventional type. Another erratic type takes the form of a deep dish or shallow bowl, of rather thick walls and clumsy form, which may be accultural; a single example was observed in use (it is shown in plate XIV). There are also mortuary



FIG. 17—Symbolic mortuary olla.

forms, including a miniature olla (figure 39) and bowl (figure 41), and such still smaller examples as those illustrated in figures 17 and 18. In addition to the utensils a few fictile figurines were found. Most of these were crude or distorted animal effigies, and one (broken) was a rudely shaped and strongly caricatured female figure some 2 inches high, with exaggerated breasts and pudenda. Analogy with neighboring tribes suggests that the very small

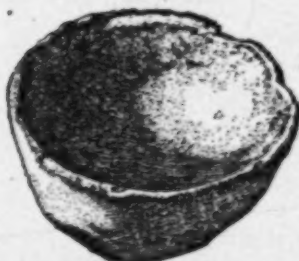


FIG. 18—Symbolic mortuary dish.

vessels and the figurines are fetishistic appurtenances to the manufacture of the pottery; e. g., that the fetish is molded at the same time and from the same material as the olla, and is then burned with it, theoretically as an invocation against cracking or other injury, but practically as a "draw-piece" for testing the progress of the firing. [171]

By far the most numerous of the utensils connected with potable water are drinking-cups and small bowls or [415]

dishes; but these are merely molluscan shells of convenient size, picked up alongshore, used once or oftener, and either discarded or carried habitually without other treatment than the natural wear of use (an example is illustrated in figure 19). Larger bowls or trays are improvised from entire carapaces of the tortoise (probably *Gopherus agassizii*), which are carried considerable distances; and still larger emergency water-vessels consist of carapaces of the green turtle (*Chelonia agas-*

222 young or crippled fowl was roped to a shrub or stone, to be fed by his
 825 fellows; when at intervals a youth stole out to rob the captive's pouch.
 At first blush this device would seem to rise above the normal industrial plane of the Seri and to lie within the lower stages of acculturation, like the cormorant fishing of China if not the hawking of medieval Europe; yet on the whole it may be deemed fairly consistent with that cruel yet mutually beneficial toleration between tribesmen and pelicans attested by the preservation of the avian communal, as already noted. Moreover, Don Andrés' observations are in accord with early notes of the exceedingly primitive aborigines of California, from whom the Seri have undoubtedly borrowed various cultural suggestions; thus Venegas quotes Padre Torquemada as saying:

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 825 I accidentally found a gull tied with a string and one of his wings broke. Around this maimed bird lay heaps of excellent pitchards, brought thither by its companions; and this, I found, was a stratagem practiced by the Indians to procure themselves a dish of fish; for they lie concealed while the gulls bring these charitable supplies, and when they think that little more is to be expected they seize upon the contributions.

The padre says also of these gulls that "they have a vast crew, which in some hangs down like the leather bottles used in Peru for carrying water, and in it they put their captures to carry them to their young ones"—from which it is evident that he refers to the pelican. Venegas adds, "Such are the mysterious ways of Providence for the support of his creatures!"¹ And in the margin of his accompanying "Mapa de la California", he introduces a vigorous picture of a captive fowl, its free fellow, and the mass of fish, the cut being headed "Alcatrazes" (pelicans).

227 Despite these devices, the dearth of fishing-tackle among the Seri is evidently extreme. Save in the single specimen figured, no piscatorial apparatus of any sort was found among the squalid but protean possessions at the Costa Rica rancharia; neither nets nor hooks nor rods nor lines nor any other device suitable for taking the finny game were found in the scores of jacales containing other artifacts on Tibarón; while Señor Encinas was conversant only with the simple method of taking fish by hand from the pools and shallows left by receding breakers or ebbing tides. This dearth of devices is significantly harmonious with other Seri characteristics: it accords with the leading place assigned the turtle in their industry and their lore; it is in harmony with that primitive and nonmechanical instinct which leads them to rely on bodily strength and skill and swiftness rather than on extracorporeal artifacts in their crude and incomplete conquest of nature; and it is a manifest expression of relation with their distinctive physical environment—for the ever-thundering breakers of their gale-swept coast are abundant, albeit capricious, bringers of living grist, while the offshore gales at low tide lay bare hundreds of acres of shoaler

¹ History of California, 1759, vol. 1, p. 41.

[accus]

MEANING OF ARCHERY POSTURE

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ally shattered, and no prints are known to have been made from it; but the fragments were carefully joined, and were kindly transferred to the Bureau by Mr Von Bayer in 1897, and from them plate XXIX was carefully drawn. The posture (partly concealed by the drapery) is extraordinary, being quite beyond the reach of the average human, and impossible of maintenance for any considerable interval even by the well-wounded Seri. The posture itself partly explains the difficulty of inducing the warriors at Costa Rica to assume it, since it is essentially a fleeting one, and indeed but a part of a continuous and stressful action—it is no less difficult to assume, or to catch in the camera, than the typical attitude of a baseball pitcher in action. The posture thus fortunately caught is quite in accord with the accounts of Seri archery from the esoteric side given by Mashim, and with the exoteric observations of Señor Encinas, Don Andrés, and others; for all accounts agree in indicating that the archer commonly rests inert and motionless as the watching feline up to a critical instant, then springs into movement as swiftly as the leaping jaguar, and hurls, rather than shoots, one, two, or three arrows before rushing in to the death or skulking to cover as the hunt may require.

The Seri archery habit is in every way consistent with the general habits of the tribe, alike in the chase and in warfare, in which the tribesmen, actuated by the fierce blood-craze common to carnivores, either leap on their prey with purpling eyes and gnashing teeth, or beat quick and stealthy retreat; and it is especially significant in the light thrown on the bow as a device for swift and vigorous rather than accurate offense, an apparatus for lengthening the arm still more than does the harpoon, and at the same time strengthening and intensifying its stroke. The quick-changing attitudes of half hurling are equally suggestive of the use of the atlatl, and support Oushing's hypothesis¹ that the bow was derived from the corded throwing-stick. While the critical posture of Seri archery is unique in degree if not in kind in the western hemisphere, so far as is known, an approximation to it (illustrated in fig. 22) has been observed in Central Africa.² On the whole the Seri mode of using the bow, like its crude form and rude finish, indicates that it is a relatively new and ill-developed artifact, possibly accultural though more probably joined indigenously with the archaic arrow to beget a highly effective device for food-getting as well as for warfare; while the genetic stages are still displayed not only in the homologies between arrow and harpoon, but by the common functions of both arrow and bow with the fire-sticks.

Concordantly, as indicated by the use of the archery apparatus, the individual taking of large game is effected either by stealthy stalking or by patient ambushade ended by a sudden rush; when, if the chase is successful, the quarry is rent and consumed as at the finish of the

¹ The Arrow, *Proceedings Am. Ass. Adv. Sci.*, vol. XLV, 1906, pp. 232-238.

² Ollivier's Journey to the Livingston Trees, *The Century Magazine*, vol. 124, 1898, p. 76.

LIGHTNESS OF THE BASKETRY

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extreme lightness in proportion to capacity, a quality due to the spongy character of the torote coil and to the thinness of the splints used in the web. The inside dimensions, weight, and dry-measure capacity (filled to the level of the brim with rice) of two typical specimens approaching extremes in size are indicated in the accompanying table. As noted elsewhere, the ware is absolutely without decorative devices in weave, paint, or form; it is habitually utilitarian, a model of economy in material and in the balance between structure and function, approaching in this respect the thin-walled cañero olla, the graceful baba, and the light but effective harpoon. The structural correspondences of the ware to a widespread type and its limited use among the tribe suggest an acculturated origin for the Seri basketry; but the delicate adjustment of means to ends in the manufacture and the strictly local character of the material quite as strongly suggest an indigenous development.

Specimen No.	Diameter	Depth	Weight	Capacity
174329.....	36 cm. (15 in.)	9.5 cm. (3 1/2 in.)	462 g. (17 oz.)	6.25 l. (8.6 qt.)
174826a...	23 cm. (9 in.)	5.9 cm. (2 1/4 in.)	142 g. (5 oz.)	1 l. (1.08 qt.)

It is impossible to portray justly the food habits of the Seri without some reference to a systematic entomophagy, which seems to possess fiducial as well as economic features. In its simplest aspect this custom is connected with the tuna harvests; the fruits are eaten in enormous quantity, and are imperfectly digested, the hard-coated seeds especially passing through the system unchanged; the seeds containing these seeds are preserved with some care, and after the harvest is passed the hoard (desiccated, of course, in the dry climate) is ground between hump and shet, and winnowed in baskets precisely as are the mesquite beans; and the product is then eaten either dry or in the form of atole like the mesquite meal. In superficial view this food factor is the precise homologous of the "second harvest" of the California Indians as described by Chavigero, Baegert,¹ and others; but it gains importance, among

¹An Account of the Aboriginal Inhabitants of the Californian Peninsula, as given by Jacob Baegert, a German Jesuit missionary. . . . Translated and arranged for the Smithsonian Institution by Charles Hays; Am. Ethn. Smithsonian Inst. for 1892, pp. 382-389. Baegert's account of foods (pp. 382-383) is so apposite as to be worthy of quotation nearly entire:

"Notwithstanding the barrenness of the country, a Californian hardly ever dies of hunger, except, perhaps, now and then an individual that falls sick in the wilderness and at a great distance from the mission, for those who are in good health trouble themselves very little about such patients, even if these should happen to be their husbands, wives, or other relations; and a little child that has lost its mother or both parents is also occasionally in danger of starving to death, because in some instances no one will take charge of it, the father being sometimes indolent enough to abandon his offspring to its fate.

"The food of the Californians, as will be seen, is certainly of a mean quality, yet it keeps them in a healthy condition, and they become strong and grow old in spite of their poor diet. The only period of the year during which the Californians can satisfy their appetite without restraint is the season of the pitahaya, which ripens in the middle of June and abounds for more than eight weeks. The gathering of this fruit may be considered as the harvest of the native inhabitants. They can eat as much of it as they please, and with some this food agrees so well that they become corpulent during that period; and for this reason I was sometimes unable to recognize at first slight individuals, otherwise perfectly

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the Seri at least, as the sole method of storing or preserving food-supplies, and hence as the germ of industrial economy out of which a

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familiar to me, who visited me after having fed for three or four weeks on these pitahaya. They do not, however, preserve them, and when the season is over they are put again on short rations. Among the roots eaten by the Californians may be mentioned the yuca, which constitutes an important article of food in many parts of America, as, for instance, in the island of Cuba, but is not very abundant in California. In some provinces it is made into a kind of bread or cake, while the Californians, who would find this process too tedious, simply roast the yuca in a fire like potatoes. Another root eaten by the natives is that of the ash plant, of which there are many kinds in this country. These species of this vegetable, however, which afford nourishment—for not all of them are edible—do not grow as plentifully as the Californians might wish, and very seldom in the neighborhood of water; the preparations, moreover, which are necessary to render this plant eatable, require much time and labor.

I saw the natives also frequently eat the roots of the common reed, just as they were taken out of the water. Certain roots, some of them not larger than those of the mustard, and different sorts in pods that grow on shrubs and little trees, and of which there are, according to Father Plancha, more than sixteen kinds, are likewise diligently sought; yet they furnish only a small quantity of grain, and all that a person can collect with much toil during a whole year may scarcely amount to 12 bushels.

"It can be said that the Californians eat, without exception, all animals they can obtain. Besides the different kinds of large indigenous quadrupeds and birds, they live nowadays on dogs and cats; horses, asses, and mules; deer, on wild, mice, and rats; lizards and snakes; bats, grasshoppers, and crickets; a kind of green caterpillar without hair, about a finger long, and an abundant white worm of the length and thickness of the thumb, which they find occasionally in old rotten wood, and consider as a particular delicacy. The chase of game, such as deer and rabbits, furnishes only a small portion of a Californian's provisions. Supposing that for 100 families 100 deer are killed in the course of a year, which is a very favorable estimate, they would supply each family only with three meals in three hundred and sixty-five days, and thus relieve but in a very small degree the hunger and the poverty of these people. The hunting for snakes, lizards, mice, and field-rats, which they practice with great diligence, is by far more profitable and supplies them with a much greater quantity of articles for consumption. Snakes, especially, are a favorite sort of small game, and thousands of them find annually their way into the stomachs of the Californians.

"In catching fish, particularly in the Pacific, which is much richer in that respect than the Gulf of California, the natives use neither nets nor hooks, but a kind of lance—that is, a long, slender, pointed piece of hard wood—which they handle very dexterously in spearing and killing their prey. Sea-turtles are caught in the same manner.

"I have now mentioned the different articles forming the ordinary food of the Californians; but, besides these, they reject nothing that their teeth can chew or their stomachs are capable of digesting, however tasteless or unclean and disgusting it may be. Thus they will eat the larvae of the Indian fig-tree, the tender shoots of certain shrubs, tanned or untanned leather, old strips of awbills, with which a horse was tied together for years; straw, the bones of poultry, sheep, goats, and calves; spoiled meat or fish swimming with worms, damaged wheat or Indian corn, and many other things of that sort which may serve to appease the hunger they are almost constantly suffering. Anything that is thrown to the dogs will be also accepted by a Californian, and he takes it without feeling offended, or thinking for a moment that he is treated below his dignity. For this reason no one took the trouble to clean the wheat or maize, which was cooked for them in a large bottle, of the black worms and little bugs, even if the numbers of these vermin had been equal to that of the grain. By a daily distribution of about 150 bushels of beans (which they are in the habit of eating without any preparation) I could have induced all my peribambos to remain permanently in the mission, excepting during the time when the pitahaya are gathered.

"I saw one day a blind man, 70 years of age, who was busily engaged in pounding between two stones an old shoe made of raw deer-skin, and whenever he had detached a piece he transferred it promptly to his mouth and swallowed it; and yet this man had a daughter and grown grandchildren. As soon as any of the cattle are killed and the hide is spread out on the ground to dry, half a dozen boys or men will instantly rush upon it and commence to work with knives, flints, and their teeth, tearing and scratching off pieces, which they eat immediately, till the hide is full of holes or cuttings in all directions. In the mission of St. Ignace and in others further toward the north there are persons who will attach a piece of meat to a string and swallow it and pull it out again a dozen times in succession, for the sake of procuring the enjoyment of its taste.

"I must here ask permission of the kind reader to mention something of an exceedingly disgusting and almost inhuman custom, the like of which probably never has been recorded of any people in the world, but which demonstrates better than anything else the whole extent of the poverty, uncleanliness, and voracity of these wretched beings. In describing the pitahaya I have already stated that they contain a great many small seeds resembling grains of powder. For some reason unknown to me these seeds are not consumed in the stomach, but pass off in an undigested state, and in order to save them the natives collect during the season of the pitahaya that which is discharged from the

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THE SECOND HARVEST

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fields their owner may be regarded as emerging. And the rise of their 262
in Scotland, the catholic and industrial beginnings generally, is shaped 514

human body, separate the seeds from it, and seed, grain, and cut them, making away over their 171
In Scotland, which the Spaniards therefore call the second harvest of the Calfish. [This 252
statement is corroborated in all particulars by Charles in his *Scottish Calfish*, Venice, 1720, 262
vol. 1, p. 11.] When I first heard that such a filthy habit existed among them I was distressed to 514
believe the report, but to my other regret I became afterwards repeatedly a witness to the practice,
which they are unwilling to abandon, like many other bad practices (probably because of the filthy
character of the custom—W. J. H.). Yet I must say to their favor that they have always abstained
from human flesh, contrary to the horrible usage of so many other American nations who can obtain
their daily food much easier than these poor Calfishes.

They have no other dish but the water, and hence be pushed that they are unsatisfied with
such strong beverages as are distilled in many American portions from Indian corn, the stalk, and
other plants, and which the Americans in these parts usually drink for the purpose of intoxicating
themselves. When a Calfish returns during his wanderings a pond or pool, and fish a stick
to which he sticks, he lies flat on the ground and applied his mouth directly to the water. Some-
times the bones of cattle are used as drinking vessels.

Having then for given an account of the different articles used as food by the natives of the
provinces, I will now proceed to describe in what manner they prepare their viands. They do not
cook, boil, or roast like people in civilized countries, because they are neither acquainted with those
methods nor possessed of vessels and utensils to employ for such purposes; and, besides, their
persons would be much beyond endurance if they had to wait till a piece of meat is well cooked or
thoroughly roasted. Their whole process chiefly consists in burning, drying, or roasting in an open
fire all such viands as are not eaten in a raw state. Without any seasoning, the pieces of meat,
the fish, fish, mussels, shell mussels, but, or whatever it may be to them, into the flames or on the
glowing coals, and left them to smolder and to roast for about a quarter of an hour, after which the
article is withdrawn, is next once only turned or changed on the outside, but still raw and barely
white. As soon as it has become sufficiently cool, they strike it a blow in order to remove the
adhering dust or sand, and eat it with great relish. Yet I must add here, that they do not previously
take the trouble to skin the ribs or dismember the ribs, nor does it necessary to clean the half-
cooked outside and some of larger animals, which they have to eat in places before they are ready
them. Birds, lambs, grasshoppers, green caterpillars, the white worms already mentioned,
and other things that would be lost, on account of their smallness, in the coals and flames of an open
fire, are pushed on hot coals, which they constantly throw up and strike in a little shell or a bit
of flying pan warm out of a certain plant. What they have pushed or roasted in this manner is
ground to powder between two stones, and eaten in a dry state. Some are roasted in the manner
of bread.

They eat everything unadorned, though they might obtain plenty of salt; but since they cannot
do every day on meat meat and constantly change their quarters, they would find it too cumbersome
to carry always a supply of salt with them.

The preparation of the fish, also called mussels or mussels by the Spaniards, requires more time
and labor. The mussels, after being properly separated from the shells, are roasted for some hours in a
strong fire, and then boiled, twelve or twenty together, in the ground, and well covered with hot
ashes, hot coals, and earth. In this state they have to remain for twelve or fourteen hours, and
when dug out again they are of a fine yellow color, and perfectly tender, making a very palatable
dish, which has served me frequently as food when I had nothing else to eat, or no dinner after dinner
in face of fish. But they are at first as a perspective on persons who are not accustomed to them, and
have the strongest suspicion enough for a few hours afterwards.

To light a fire the Calfishes make use of wood and bark, but obtain it by the friction of two
pieces of wood. One of these is cylindrical, and pointed on one end, which the latter a round one by
the other, and by turning the cylindrical piece with great rapidity between their hands. Like a twirling
stick, they succeed in lighting the lower piece if they continue the process for a sufficient length
of time.

The Calfishes have no fixed time for any sort of business, and are, consequently, whenever
they have anything, or feel inclined to do so, which is nearly always the case. I never asked one of
them whether he was hungry who failed to answer in the affirmative, even if his appearance indicated
the contrary. A meal in the middle of the day is the least in use among them, because they all sit
out only in the morning for their hunting expeditions, and return only in the evening to the place
from which they started, if they do not choose some other locality for their night quarters. The day
being thus spent in roasting about and searching for food, they have no time left for preparing a
dinner at noon. They start always empty-handed; for if produce something remains from their
evening repasts they certainly eat it during the night in walking accounts or on the following morning
before having. The Calfishes can endure longer cold and much longer than other people,
whenever they will not unnecessarily if a chance is given. I often tried to buy a piece of walrus from
them when the skin had but lately been stripped off the deer, but regularly received the answer that
nothing was left; and I knew well enough that the hunter who killed the animal needed no sustenance

262 by faith and attendant ceremony; for the doubly consumed food is
514 credited with intensified powers and virtues, and held to be specially
potent in the relief of hunger and in giving endurance for the hard
warpath or prolonged chase; it is—and makes—very strong ("mucho
fuerte"), in the laconic and confident explanation of Maahém. Incon-
gruous as the custom is to higher culture, it finds natural suggestion
in the everyday habits of the tribe, who are wonted not only to the
eating of animal entrails in raw and uncleaned condition, but especially
to the relief of the sharpest pangs of hunger by means of the soft
structures and their semiasimilated contents—an association of touch
influence in primitive thought. Concordantly with the custom and the
faith grown out of it, the excreta in general take a prominent place
in the Seri mind; the use of urine in ablution, etc., is little understood
and may be passed over; but all bony feces—and it may be noted that
the "sign" of the Seri more resembles that of wolves or snake-eating
swine than that of men—following gorges of large quarry are custom-
arily located and kept in mind for recourse in time of ensuing shortage,
when the mass is ground on the abut and reconsumed; and even the
ordinary discharge is preserved during the seasons of less reliable
food-supply.

514 There is an obscure connection between this curious and repulsive
764 food custom of the Seri and the mortuary customs of the tribe, which

600 to finish it. Twenty-four pounds of meat in twenty-four hours is not deemed an extraordinary ration
for a single person, and to see anything outside before him is a temptation for a Californian which he
cannot resist, and not to make away with it before night would be a victory he is very seldom
capable of gaining over himself.

Clavigero's account of the food-habits of the California Indians is similar, though generally less
explicit. According to him the seeds forming the "second harvest of pitahayas" are extracted care-
fully while fresh, and are afterward roasted, ground, and preserved in the form of meal against the
coming winter. Of the re-swallowing habit, he says:

"The savages living in the northern part of the peninsula have found the secret, unknown to
mortals in general, to eat and re-eat the same meal repeatedly. They tie a string around a mouthful
of meat dried and hardened in the sun. After chewing it for a while they swallow it, leaving the string
hanging from the mouth. After two or three minutes, by means of the string they draw the morsel up
again to be re-chewed, and this they repeat so many times as may be necessary until the morsel is
consumed or so softened that the string will not hold it any longer. In extracting it from the throat
they make such a noise that to one who has not before heard it it appears that they are choking
themselves.

"When many individuals are gathered together to eat in this manner it is practiced with more cere-
mony. They seat themselves on the ground, forming a circle of eight or ten persons. One of them
takes the mouthful and swallows it, and afterwards draws it up again and passes it to the next one,
and this one to another, proceeding thus around the circle with much enjoyment until the morsel is
consumed. This has astonished the Spaniards who have seen it, and indeed it would not be credible
if it had not been unanimously testified to by all who have been in that country. A viceroy of Mexico who
did not believe this, notwithstanding that several and prominent persons confirmed it, having after-
wards gone to California saw it with their own eyes. Among those Indians who have embraced
Christianity this heathenish and dangerous method of eating has been abandoned in consequence
of the continual reports of the missionaries." (Historia de la Antigua y Nueva California, obra postuma
del Padre Francisco Javier Clavigero, Mexico, 1822, p. 24.)

171 The records of Clavigero and Hagerst indicate fair correspondence in the food habits of the Califor-
262 nia Indians and the Seri, though there are certain noteworthy differences, e. g., the taste of the hogwad
among the former and of the ground squirrel among the latter; it would also appear that the Califor-
nians were the more largely vegetarian and the better advanced in culinary processes. The cus-
toms of the Seri throw light on the grounds of "re-eating", for the process would appear to be but an
extension of the repeated mauling and swallowing of heathenish strings still attached to the bones of
large animals.

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502 Despite their poverty in propelling devices, the Seri navigate their waters successfully and extensively. Perhaps the commonest function of the craft is that exercised in connection with the turtle fishery, though its chief office as a factor of general industrial economy is that of bridging El Infernillo at the will of the roving clans. It is by means of this craft, also, that the semiceremonial pelican feasts on Tiburón are consummated; it is by the same means that Isla Patos, Isla Turner, Roa Foca, and other insulated sources of food-supply are habitually reached; and both Mashém's accounts and the Jesuits' records indicate that occasional voyages are pushed to San Esteban, San Lorenzo, Angel de la Guarda, and even to the Baja California coast.

Concordantly with the tribal customs, little freight is carried. The traveling family transport their poor possessions to the shore, bring out the balas from its hiding place in the thick and thorny fog-shrubbery, launch it, load it with a filled olla and the weapons of a man and implements of a woman, besides any chance food and clothing, and embark lightly to enjoy the semirepose of drifting before the breeze—until the rising gale brings labor still more arduous than that of scouring the spall-strewn slopes or sandy stretches of their hard motherland. Commonly the terminus of the trip is fixed largely by the chance of wind and tide; and when it is reached the party carry the craft ashore, conceal it shrewdly, and then take up their birdskin bed and walk forth in search of fresh water and meat. The successful fishing trips of course end in orgies of gorging, and when the voyage is the climax of a foray to the mainland frontier for stock-stealing, the quarters and paunches and heads hastily thrown aboard at the mainland side of the strait are carried to the rancherías for consumption at leisure; and this has happened so often that equine hoofs and bovine bones are common constituents of the middens on Tiburón.

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501 Although measurably similar to Central American and South American types of water-craft, the Seri balas is a notably distinct type for its region. The California natives, as well as those of the mainland of Mexico south of Rio Yaqui, used rafts made either of palm trunks or of other logs lashed alongside rather than balas; while the far-traveling tribes used either sails or well-differentiated paddles for propulsion.

501 Briefly, the Seri balas is remarkable for perfect adaptation to these needs of its makers shaped by their distinctive environment. It seems to approach the ideal of industrial economy—the acme of practicality—in the adjustment of materials and forces to the ends of a lowly culture; and, like the olla and harpoon and arrow, it affords an impressive example of the adjustment of artifacts to environment through the intervention of budding intelligence. Yet the chief significance of the craft would seem to reside in its vestigial character as a survival of that orian stage in the course of human development

THE KILT AND WAMMUS

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and XIX; the birdskin kilt (put on for the purpose) is illustrated in plate XVIII, while the aboriginal fabric is fairly represented in plate XXIX. Although ordinarily worn as a kilt, the same article (temporarily replaced by an improvised substitute) serves other purposes at the convenience of the wearer; in the chase for tunas and for moving game it becomes a bag or pack-sheet; in case of cold rain it is shifted to the shoulders or the exposed side; during the sleeta it is elevated on a shrub and a stick to serve as a canopy; at sleeping time generally it forms (especially when of birdskin) a bed, i. e., a combined mattress and coverlet; and in attack or defense the pelican skin is at once standard, buckler, and waving cap to confuse quarry or enemy after the manner of the tiorador's cloak.

An almost equally distinctive garment is a short shirt or wammus, with long sleeves, worn by men and women but not by children; ordinarily it covers the thorax, missing connection with the kilt by a few inches, and so affording ventilation and space for suckling the teeming offspring. Unlike the kilt, it is an actual garment, fitted with sleeves and fastened in front with hair-cord strings. Although the Seri wammus corresponds fairly with a Yaqui garment, it seems practically certain that it is of local aboriginal design, and that it was made primitively of haircloth or native textiles (as illustrated in plate XXIX) and worn rather ceremoniously; but latterly it is made of manta and is worn habitually (at least by the women and on the frontier), though cast aside in preparation for any special task or effort—i. e., it is not connected with pudency-sense, save to a slight degree in the younger women. The form, function, and prevalence of the wammus are illustrated by the group shown in plate XIII, in which nearly all of the thirty-odd adults wear the garment.

These two articles constitute the ordinary wearing apparel of the Seri, though they are commonly supplemented (especially when both are of manta) by a pelican-skin robe, which is habitually carried to serve as bed or mackintosh, according to the chance of journey and weather, or as a shield in sudden warfare. No head-covering is used, save in the ceremonial masquerade, when the heads of animals are worn as masks,¹ or in aping Caucasian customs, especially on expeditions for barter (as illustrated in plate XII). Loose trousers of Mexican pattern are sometimes put on at frontier points, but are discarded in Seriland proper, save by Mashém, who maintains prestige partly by this borrowed badge of Caucasian superiority. Leggings and moccasins are eschewed, naturally enough, since they would afford little protection from the sharp spalls and savage thorns of the district, and would give lodgment for the barbed spines inevitably gathered in rapid chase or flight over cactus-dotted stretches; and the only foot-covering seen (save Mashém's boots) was a single sandal made from the rough skin of a turtle-slipper, apparently for ceremonial rather than practical use.

¹ Hardy (Travels, p. 286) describes the ceremonial wearing of the heads of deer with horns attached.

[mean]

THE HUPF AND AHST

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smaller implement is *hupf* or *hupf* (the initial sound explosive, combining the phonetic values of *h* and *k*; the vowel nearly as in "put", or like "oo" in "took"); the term is clearly an onomatopoeia, imitating the sound of the blow delivered on flesh, on a mass of partially crushed mesquite beans, etc.—indeed, both the word and the sound of the blow seem to connote food or eating, while regular pounding with the implement (either in ordinary use or by special design) is a gathering signal. So far as ascertained, the term is not extended to other objects save potential implements in the form of suitable pebbles; but it is significant that there is no distinction in speech—nor in thought, so far as could be ascertained—between the natural pebble and the wear-shaped implement.¹ The local terms *ahst* and *hupf* are explicit and specific, and without precise equivalents in other known tongues; moreover, the objects designated are too inchoate in development and hence too protean in function to be appropriately denoted by the designations of implements pertaining to more differentiated culture (mortar, metate, pestle, muller, mano, etc.). Accordingly it seems desirable to retain the Seri designations.²

A typical specimen of intermediate size, used commonly as an *ahst*, but susceptible of employment as a *hupf*, is illustrated (natural size) in plates XXXV and XXXVI.³ It is a hard, tough, hornblende granite or greenstone, with a few structure-lines brought out by weathering and wave-wearing. Its weight is 4 pounds 10 ounces (2.10 kilograms); its form and surface are entirely natural, save for slight battering shown on the two principal faces and still less conspicuous bruises along one edge (as imperfectly shown toward the left of plate XXXV). The specimen was found in a jacal (illustrated in plate VI) on Rada Ballena, within a few hours after abandonment, in the position in which it was hastily left by the last users; it was smeared with blood and fat (which still remain, as is shown in plate XXXV) and bits of flesh, and bore bloody finger prints of two sizes—those of a man and those of a woman or large child; beside it lay the *hupf* depicted in plate XLII. In its last use the unwieldy cobble served as an *ahst*, but the markings on the edge record use also as a hand implement.

A functionally similar implement is illustrated in plate XXXVII (on reduced scale; maximum length 8½ inches = 210 cm.). It is of tough

¹ The failure to discriminate natural objects from artificialized implements produced from such objects by wear of use is a noteworthy trait of primitive folk. It is conspicuous among the acorn Indians of California, who fail to appreciate the manufacture of their own mills and who conceive that their boulder mortars and creek pebble pestles, even when completely artificialized by a generation's use, are merely found and appropriated; and a similar state of mind persists among the well-advanced Papago, who have no conception of making their well-finished mortars and pestles, or even the stone tomahawks occasionally surviving, but regard the implements as fruits of discovery or treasure-trove only.

² It should be noted that the terms used in the titles of the accompanying plates are not descriptive, but merely descriptive.

³ This, like the other illustrations of the series (except plate LVI, which is a lithograph, partly process and partly handwork), are photo-mechanical reproductions made directly from the objects; all are natural size unless otherwise specified.

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is an infallible remedy. On the whole it seems probable that the yerba mala (*Sebastiania bilocularis*?), or yerba de flecha, or mago, or magot, yielded or formed the standard arrow-poison of the Opata and perhaps of other Indians, and that the ill-repute of the shrub survived and spread throughout Mexicanized Sonora in such frequent repetition and common belief as to affect the ideas of residents and travelers alike; but it seems equally probable that the magic-inspired brew of the Seri is entirely distinct.¹ 278 [171]

As suggested by widespread primitive customs, and as illustrated specifically by the arrow-charming, the warfare of the Seri is largely sortilegic, this feature being but an extension and magnification of a corresponding feature of their hunting customs. The economic object of the chase is, of course, the flesh of the quarry; but the hunt normally begins with invocatory or other fiducial ceremonies, culminates in a feast opened with oblations, and ends in the use of horns or hoofs, teeth or bones, mane or tail, as talisman-trophies—primarily pledges of fealty to the favorable potencies, only secondarily symbols of success. The observances illumine the ever-present esoteric object of the chase, which is to gain the favor or overcome the power of the beast-god represented by the animal hunted; in general, this is sought to be effected through mimetic movements, or symbolic objects, associated with that animal-kind, and the retained charm-trophy is valued as a symbol of the placation or outwitting of a particular deity. Similarly, the Seri warrior strives for the supposed deific symbols of the enemy—the scalp or headress or arrow of the alien tribesman, the fire-breathing and echo-making (as well as death-dealing) wand of the Caucasian; and the Papago arrows, Yaqui scalps, and white man's firearms are sought avidly, treasured as fetiches, and often carried conspicuously as badges of borrowed prowess.² So the Seri are never without alien insignia in the form of weapons. The day before the 1895 expedition entered their stronghold, a band of warriors and women were frightened from a freshly slaughtered cow by a party of yaqueros so suddenly that their arms were left behind—and these 224 [176] 727 726

¹ It should be noted that the actuality of the poisonous property ascribed to the yerba mala is in some degree questionable; the plant is the only one of southern Papagueria yielding suitable material for arrow shafts, and it is possible (if not probable) that it was concentrated to this purpose by the aboriginal Opata and protected by taboo in such wise as to become a sacred and fœtious thing. It is accordingly by no means improbable that the reputed poisonous property is but the product of generations of association, and that the plant is really harmless—an inference supported by experiments on the part of the leader of the 1895 expedition, who swallowed the juice of stem and leaves in two or three sips without producing any perceptible effect. On the other hand, it should be observed that the region is one abounding in toxic juices, and that this shrub is so luxuriant and so free from thorny arisements and other protective devices of a mechanical sort as to raise the presumption that it must be protected against herbivorous animals, at least, by chemical constituents of some kind (cf. ante, p. 28).

² These natives on the part of the Seri were reciprocated by their tribal enemies; a Papago fetich in the form of an Apache arrowpoint, long worn by an aged warrior as a protection from Apache arrows, was among the spoil of the 1895 expedition; and a "poisoned" Seri arrowhead and ferochaff, worn by a represented Papago "doctor" as a badge of invulnerability to similar ailments, was mentioned above to the 1895 expedition, but was held above price by its owner—and this despite the fact that he had been christened for decades, and retained no other pagan symbols. [171]

[1898]

THE REPUTED ANTHROPOPHAGY

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Sonoran belief that the similarity extends one step farther, and that the human victims are rent and consumed, like the beasts. There is a lamentable lack of data concerning the alleged anthropophagy of the Seri; on the one hand there is the deep-seated local opinion, generally growing stronger as the tribal territory is approached, and agreeing so well with the hunting customs, the thaumaturgic arrow-poisoning, the zoomimic handicraft, and zootheriac faith, and especially with the pervading fetich-piracy of the folk, that its validity would seem inherently probable; on the other hand, there is not only a dearth of specific positive testimony, but hacendados Encinas (best informed among Caucasians concerning Seri customs) and several of his yeomen reject the prevailing belief, while Mashim consistently repudiated the custom, both in general and in particular, and in ceremonial as well as in economic aspects, whenever and in whatever way the subject was approached during his intercourse with the 1894 expedition. On the whole, the much-mooted question of Seri cannibalism must be left open pending farther inquiry, with some preponderance of evidence against the existence of the custom.

The war-frenzy of the Seri fighters is significant in its parallelism with the blood-craze of the chase, and even more so in its analogy with the warpath customs and ceremonies of most Amerind tribes and many other primitive peoples. In typical tribes the warpath custom is a most distinctive one, standing for an abnormal state of mind and an unaccustomed habit of body, perhaps to the extent of an extreme exaltation or obsession akin to intoxication, in which the ordinary ideas of justice and humanity are inhibited; among most tribes the condition is sought voluntarily and deliberately when occasion is thought to demand, and is superinduced by fasts and vigils, exciting songs and ceremonies, and related means; while among certain tribes the aid of symbolic "medicines", which may be actual intoxicants, is invoked. Thus the savage on the warpath is a different being from the same man in times of peace; viewed from his own standpoint, he is possessed of an alien and violent demon, usually that of a fantastic and furious beast-god whose rage he must symbolize and enact; viewed from the standpoint of higher culture, he is a raving and ruthless maniac whose craze is none the less complete by reason of its voluntary origin. The warpath frenzy is one of the fundamental, even if little understood, facts of primitive life, and the character of the savage tribe can not properly be weighed without appreciation of it. Now, the Seri blood-craze seems measurably distinct in two ways: in the first place, it expresses a more profound and bitter enmity toward aliens than is found among most savage tribes—i. e., it is instinctive and persistent in exceptional degree; in the second place, it is more spontaneous and explosive in its culmination when conditions favor than among tribesmen who induce the condition by elaborate preparation—i. e., it is dependent on the swift-changing hazard of warfare in exceptional

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171 measure; so that the Seri frenzy is at once more instinctive and more
726 brutal, or in general terms more inchoate, than the corresponding
condition among most of their contemporaries. Accordingly the war
customs, like several other features of the tribe, seem to afford a con-
necting link between the habits normal to carnivorous beasts and the
well-organized war customs of somewhat higher culture-grades; and
thus they contribute toward outlining the course of human development
through some of its darker stages.

712 Conformably with their poverty in offensive devices, the Seri are
exceedingly poor in devices for defense. It is an impressive fact that
a restricted motherland which has been successfully protected against
invasion for nearly four centuries of history should be destitute of
earthworks, fortifications, barricades, palisades, or other protective
structures; yet no such structures exist on any of the natural lines of
approach, and none are known anywhere in Seriland save in a single
spot—Tinaja Trinchera—where there are a few walls of loose laid stone,
so unlike anything else in Seriland and so like the structures character-
istic of Papagueria as to strongly indicate (if not to demonstrate) inva-
sion and temporary occupancy by aliens. The jacales are not fortified in
the slightest degree, unless the turtle-shells with which they are some-
times shingled be regarded as armor; even the most ancient rancherias
are absolutely devoid of contravallations of earth, stone, or other mater-
ial; and both the structures themselves and the expressions of the
folk concerning them indicate that the jacales are not regarded as
fortresses or places of refuge against enemies, but only as comfortable
lodges for use in times of peace. Nor are walls like those of the border-
land Tinaja Trinchera known in the interior of the tribal territory—e. g.,
the similarly conditioned Tinaja Anita, which differs only in the greater
abundance and permanence of the water-supply, is entirely devoid of
artificial structures, not even a pebble or boulder being artificially
placed save perchance by the casual trampling of the pathways. As
already noted, the Seri seem to be practically devoid of knife-sense;
they are still more completely devoid of fort-sense, although (and evi-
dently because) they rely so fully on natural things, including tutularies
and their own fleetness, for safety.

713 Although devoid of even the germ of fortification-sense, so far as can
be discovered, the Seri are not without a sort of shield-sense, which is
of much significance partly by reason of its inchoate character. The
ordinary shield is a pelican pelt, or a robe or kilt comprising several
skins; it is employed either for confusing the enemy by swift brandish-
ing, something after the fashion of the capa of the banderillero in the
bull ring, or for actual protection of the body against arrows and other
missiles or weapons. So far as known it is not backed or otherwise
strengthened, the user relying solely on the stout integument and
thick feathers—or rather on the mystical properties imputed to the
825] pelt as the mystery-tinged investiture of their chief creative tutelary.

[1895]

RIGOROUS MARITAL REGULATIONS

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the character of the man; in very fact, it at the same time both measures and makes the character of the woman. Among other privileges bestowed on the bride during the probationary period are those of receiving the most intimate attentions from the chafellows of the groom; and these are noteworthy as suggestions of a vestigial polyandry or adelphogamy. At the close of the year the probation ends in a feast provided by the probationer, who thereupon enters the bride's jocal as a perpetual guest of unlimited personal privileges (subject to tribal custom); while the bride passes from a half-wanton heyday into the duller routine of matronly existence. 585 [835]

These details were elicited at Costa Rica in 1894 through methodical inquiries made in connection with the linguistic collection. This collection was made with the cooperation of Señor Alveimar-León as Spanish-English interpreter, together with Mashém and (commonly) the chafmother known as Juana Maria. Usually quite a group of Seri matrons with two or three warriors were gathered about, and to these Mashém frequently appealed for advice and verification, while they constantly expressed approval or disapproval of questions and replies, as gathered through Mashém's words and mien, in such manner as to afford a fair index of their habitual thought—e. g., when the Seri vernacular for "twins" was obtained and the inquiry was extended (by normal association of ideas) to the term for "triplets", Mashém collapsed into moody silence while the rest of the group decamped incessantly with horror-stricken countenances—thereby suggesting cautious subsequent inquiry, and the discovery that triplets are deemed evil monsters and their production a capital crime. It was in one of the earlier conferences that the first intimations concerning the unusual marital customs were incidentally brought out; the Caucasian interpreter and bystanders were diverted by the naive reference to the moral test, but their expressions were hastily checked lest the native informants might be startled and rendered secretive; then, during two later conferences, when Mashém and several matrons were freely participating in the proceedings, the line of inquiry was so turned as to touch on various aspects of the marriage custom and bring out all essential features; so that much confidence is reposed in the accuracy of the details. The confidence in the verity of the customs was such as not to be impaired seriously by the fact that no records of coincident moral tests were known in the voluminous literature of marriage and its concomitants; nor was it shaken by the still weightier fact that none of the experienced ethnologists to whom inquiries were addressed during ensuing months were acquainted with parallel customs—indeed the only shadow of corroboration thus obtained came in the form of references to the widespread requirement of continence in war and ceremonies, 124 [845]

* It may be observed that Kubala, when visited in January, 1895, failed to corroborate the descriptions of Mashém and the matrons; but his failure occasioned little surprise for the reason that he has not lived with his tribe since early boyhood, and is equally unimformed (or uncommunicative) concerning the myths, ceremonies, and even the customs of the tribe. 171 [85]

mums]

PARALLEL MARRIAGE CUSTOMS

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time they agree, she shall go along with him as betrothed, but he is not to have any knowledge of her till the stipulated payment is discharged; all which is punctually observed. Then they lie together under one covering for several months, and the woman remains the same as she was when she first came to him.⁷¹

This record also is peculiarly pertinent, partly in that it practically corroborates the Seri testimony, but chiefly in that it indicates definite transition toward a higher culture-plane in which the primitive material test is at least partially replaced by a commutation in goods or their equivalents.

On reducing the marital customs of the Seri to conventional terms, the more prominent features are found to be (1) strict clan exogamy and (2) absolute tribal endogamy, together with (3) theoretical or constructive monogamy, coupled with (4) vague traces of polyandry, and (5) an apparently superficial polygyny, as well as (6) total absence of purchase or capture of either spouse.⁵⁸²

In reviewing the customs in the light of their influence on the everyday life of the tribe, certain features stand out conspicuously: (1) Perhaps the most striking feature is the collective character of the function; for while the movement originates in personal inclination on the part of the suitor and is shaped by personal inclination on the part of the maiden, all manifestations of inclination are open and public (at least to the elders of the two clans involved), while the personal sentiments on both sides are completely subordinated to the public interests of clans and tribe as weighed and decided by the matronly lawgivers and adolphiarchal administratives. Thus neither man nor maid mates for himself, but both love and move in the tribal interests and along the lines laid down by the tribal leaders. (2) As a corollary or a complement (according to the viewpoint) to the collectivity of the mating, the next most striking feature is the formal or legal aspect of the union; for the entire affair, from inception to consummation, is rigorously regulated by precedents and usages handed down from an immemorial past. Thus the roots of young affection are not destroyed but rather cultivated, though the burgeoning vine and the outreaching tendrils are trained to a social structure shaped in ages gone and kept in the olden form by unbroken tradition. (3) A collateral feature of the customs is the necessary reaction of the requirements on individual character of both groom and bride; for the would-be warrior-spouse is compelled to display high qualities of physical and moral manhood on pain of ostracism and outlawry, so that his passions of ambition and affection are at once stimulated to the highest degree, while the maiden's pride of blood and possession and her sense of regnant responsibility are fostered to the utmost. The brief preliminary courtship and the long probationary mating mark an era of intensification in two lives at their most impressionable stage; and if there be⁵⁸¹
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¹ The History of Carolina, etc., by John Lawson (1734), reprint of 1886, pp. 302-303. Attention was called to this passage by Mr James Mooney.

[mcm]

PRIMARY STAGE OF ETHNOGAMY

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condition characterized by absence of property and thrift-sense; while its most essential concomitant is extratribal antipathy too bitter to permit toleration of alien blood, or even of alien presence save under the constraint of superior force. 000

MORTUARY CUSTOMS

The prevailing opinion among the better informed Guaranian neighbors of the Seri is that the tribesmen display an inhuman indifference to their dead; and this opinion is one of the factors—combining with current notions as to cannibalism and arrow-poisoning and beastlike toothings in battle—involved in the widespread feeling that the tribesmen are to be accounted as mongrel and uncanny monsters rather than human beings. 649 764

The opinion that the Seri neglect their dead on occasion would seem to rest on a considerable body of evidence; Mendoza's record of the numberless neglected corpses of warriors polluting the air and poisoning the streams of Cerro Prieto in 1737 would seem to be unusual only in its fulness; and Señor Encinas, albeit so conservative as to repudiate the reputed anthropophagy and to recognize better qualities among the folk than any contemporary, declares that they are utterly negligent of their dead, save that when the bodies lie near rancherías heaps of brambles are thrown over them to bar—and thus to lessen the disturbance from—prowling coyotes. Quite indubitable, too, is the specific testimony of vaqueros to the effect that Seri raiders overtaken by the Draconian penalty of the frontier merely lie where they fall, even when this is well within reach of the tribesmen, Don Andrés Noriega's verification of his boast (ante, p. 113) being an instance in point. On the other hand stands the conspicuous fact (unknown to the frontiersman) that well-marked cemeteries adjoin some of the rancherías of interior Seriland. The sum of the somewhat discrepant evidence accords with a characteristically unsatisfactory statement by Mash'm, to the effect that the mourning ceremonies are important only in connection with women—i. e., matrons—because "the woman is just like the family" ("la mujer es como la familia"); and this intimation, in turn, is corroborated by the single known instance of inhumation in Seriland, as well as by certain indirect indications connected with the scatophagic customs (ante, p. 213). On the whole it seems certain that the mortuary ceremonies attain their highest development in connection with females, the recognized blood-bearers and legislators of the tribe. 114 764 [562]

The special dignification of females in respect to funerary rites is without precise parallel among other American aborigines, so far as is known, but is not without analogues in the shape of (presumptive) vestiges of a former magnification of matrons in the mortuary customs of certain tribes. The vestiges are especially clear among the Iroquoian Indians, whose aboriginal sociality coincided with that of the 171 764 362

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562 Seri at various points; witness the following passage from the Onondaga mourning ritual, as collected and translated by Hewitt:

Now, moreover, again, another thing, indeed, our voices come forth to utter; and is it not that that we say, that far yonder the Hiyance (chief of highest grade) who labored for us so well is falling away as falls a tree? So, moreover, it is those things that he bears away with him—this file of mat-carriers, warriors all, visible and present here; also this file of those who customarily dance the cere-dances (the women)—they go prosperously. And alas! How utterly calamitous is that thing that occurs when the body of this woman falls! For, verily, far yonder in the length of the file will the file of our grandchildren be removed! These our grandchildren who run hither and thither, in sport, these our grandchildren who by creeping drag themselves about in the dust, these our grandchildren whose bodies are slung to cradle-boards, and even those of them whose faces are looking hitherward as they come under the ground.¹

764 The identifiable cemeteries of Seriland are few and small—much less populous than might be expected of a tribe numbering several hundreds for centuries; and able to maintain well-worn trails threading all parts of their rugged domain. Three graves were noted near the abandoned rancheria at Pozo Escalante; one was observed near a jacal skeleton at Barranca Salina; five or six were made out doubtfully on a low spur adjacent to Punta Antigualla; another was found near the rancheria midway thence to Punta Ygnacio; still another was doubtfully identified hard by a ruinous jacal just where the foothills of Sierra Seri descend to the plain stretching toward Punta Miguel; and this distribution may be deemed representative. A scant half-dozen perceptible graves were observed near the considerable rancheria of Punta Nargansett, which was numerously inhabited during the Dewey surveys of 1873; one was found adjoining the old jacal near Campo Navidad; but none were discovered in connection with the extensive rancheria on Rada Ballena. The largest known cemetery occupies the triangular point of shrub-dotted plain pushing out toward the site of the old rancheria at the base of Punta Tormenta; it comprises perhaps a score of evidently ancient graves, while two newer ones were found on the pebble bar beyond the jacales. When near the pebbly beaches the graves are marked by heaps of pebbles and small cobbles, commonly about the size of those used as hupfa, these cairns being 3 or 4 feet long, two-thirds as wide, and seldom over 12 or 13 inches in height; and most of the cairns are accompanied and enlarged by piles (ranging from a peck to a bushel) of the scatophagic shells already noted. The graves remote from pebbly beaches are marked by heaps of colla stems and branches, rudely thatched with miscellaneous brambles roughly pinned

¹ This is the archaic of the Bureau of American Ethnology. A somewhat more obscure version was recorded by Hale in "The Inupiat Book of Hies": "Now, there is another thing we say, we younger brothers. He who has worked for us has gone afar off; and he also will in time take with him all those—the whole body of warriors and also the whole body of women—they will go with him. But it is still harder when the woman shall die, because with her the file is lost. And also the grandchildren and the little ones who are running around—these he will take away; and also those that are creeping on the ground, and also those that are on the cradle-boards; all these he will take away with him." (Bridson's Library of Aboriginal American Literature, number 11, 1902, pp. 141-142.)

000 but as the vicarious and visible exponent of an ever-immanent beast-god—the clan tutelary; her appeals to her brothers for administrative aid are precisely parallel to her intuitive passage from zoomimicry into the field of mechanical chance defined by protolithic implements; and the appeal, like the execution of the law either by herself or by her brothers, is controlled and regulated in absolute deference to the zoic pantheon. Thus, the inchoate tribal laws, expressed in habitual lines of action and modes of thought, are by no means conscious products of human wisdom, but are confidently imputed to a superhuman wisdom on the part of myth-magnified beasts of a mystical olden time; and, similarly, the power of executing these laws is by no means cognized as conscious human faculty, but is faithfully imputed to supernal potencies of mythical monsters. Essentially, therefore, the tribal law is putatively *zoocratic*; and the social organization may justly be classed as a putative *zoocracy*.

562 To prevent possible confusion, it may be desirable to note specifically that the Seri government is not matriarchal in any proper
642 sense. As pointed out elsewhere, matriarchy is not (at least among the American aborigines) an antecedent of patriarchy, but a correlative of that form of government; and it would be especially erroneous and misleading to designate as matriarchal a tribe like the Seri, whose chiefs and subchiefs (i. e., appellate clan-administratives) are invariably masculine. Neither would it be just, despite the dominance of matrons in legislative and judicative matters, to regard the tribal government as a gynocracy, such as have been noted in various parts of North America—e. g., in Sonora, according to a current tradition as to the origin of the name of the province, and among the Pomo Indians of California, according to Cronise as interpreted by Powers;¹ for the actual control is exercised by the warrior brothers, while the ideal control is vested in that zoic pantheon of which the matrons are putative mouthpieces. Physically and practically the Seri government is an adelpharchy, as already indicated; but in the minds of the tribesmen themselves it is an inchoate theocracy putatively headed by a pantheon of animate monsters, whose prelates are personified in the painted clan-mothers.

105 Summarily, then, the Seri are zoosomatic in esthetic, zoomimic in technic, zootheistic in faith, and putatively zoocratic in government, while even the Seri tongue is so largely mimetic or onomatopoeic in form as to accord with the industries and institutions; and in view of the intimate interrelations between the several lines of activity, it would seem preferable to determine the culture-status from the coincident testimony of all the lines, but feasible to measure it in terms of any one or more of these activital lines.

171 Now, on comparing the characteristics of the Seri with those of other known tribes of North America, many resemblances and a few differ-

¹ Tribes of California, pp. 140-141.

ences are found; and practically all of the more conspicuous differences extend in the same direction—i. e., they combine to indicate an exceptionally primitive, or lowly, or sole, plane for the simple savages of Seriland. Thus, few tribes are so poor in esthetic as the Seri, and in none other are the esthetic devices so clearly and so exclusively sole; few if any other known tribes so clearly exemplify zoomimic culture; none other so well represents protolithic culture, and no other known tribe is so completely devoid of mechanical devices reflecting higher culture; in general socialry no other known tribe better, or indeed so well, exemplifies zoocracy, while in such special features as those of ethnogamic mating, ceremonial autophagy, and mortuary magnification of the blood-carriers, the folk mark the most primitive known phase of cultural advancement; and although language and faith yield less definite measure, their testimony is coincident with that of the other lines of activity. Accordingly the Seri must be assigned to the initial place in the scale of cultural development represented by the American aborigine, and hence to the lowest recognized phase of savagery.

Two or three corollaries of this placement are noteworthy: (1) In most of the researches concerning human development conducted by the anthropologists of the world, attention has been given chiefly or wholly to the somatic or biotic characters of *Homo sapiens*; but while various physical features of the Seri suggest bestial affinities (as has been pointed out in an earlier chapter), it is especially significant that the nearest and clearest indications of bestial relationship are found in the psychical features of the lowly folk—for sole faith in its multifarious manifestations is but a reflection of burgeoning yet still bestial mind.

(2) While human independence of environment culminates in socialry, the interdependence of activital lines so well revealed in lowest savagery demonstrates that institutions and all government necessarily reflect environment; and, at the same time, that the progressive emancipation from environment signalized in the higher culture-grades measures the conquest of Nature through industrial activity—for both the productive work and the attendant exercise cumulatively elevate sapient Man above mindless Nature.

(3) An adjunct of progress in every stage of development, as indicated with especial clearness in the earliest stages, is the annulment or curtailment of both physical and formal law, and the substitution of cumulatively growing volition: the development of the esthetic planes from the intuitive toward the ratiocinative, that of the industrial from the instinctive toward the inventive, and that of the social from the merely reflective to the vigorously constructive; with every pulse of progress the subservience to blind chance and imaginative fragment diminishes; and with each increment of sound confidence the ability to surmount physical obstruction and to dispense with primitive formality is cumulatively augmented.

to Ures is good farming country, and why the only non-agricultural people in Sonora should have held this stretch, is hard to see. Moreover, Orozco's bringing the Serian tribes so far inland as to abut on the Opata, severs the continuity of the American Pima Alto and Papago with the Mexican Pima Hajo, whose speech is almost identical. This identity is best understood as the reflection of a continuous occupation by the Pima of the whole foothill country from the Gila to the Mayo, between the Serian desert lowlanders and the Opata in their mountain valleys, with the Yaqui, Mayo, and other Cahita peoples replacing the Serians south of Guaymas where heavier rainfall and large flowing rivers made the lowlands attractive to farming peoples. The natural inland frontier of the Seri along the Sonora River would have been at the Siete Cerros, a low range some 25 miles, more or less, west of Hermosillo, where grass ends and creosote bush and giant sahuaro cactus soon become dominant beside mesquite. This boundary would have put the farmers on farm land, the roving gatherers into the succulently overgrown desert and along the food-stocked coast.

The Seri, then, in the wider sense, including the Guaymas, Tepocas, etc., were anomalous among the native peoples of Sonora in habitat as well as in culture. Now a similar country, almost waterless and cactus dominated, is the central segment of Mexican California. Here lived the Cochimi, dialectically the most divergent of the Yuman peoples, and with a culture similar to that of the Seri at least in its level. The habitat enforced a similar subsistence economy, unsettled living, scattering of population, inability of serious accumulation of property, and hence no doubt a relative paucity of most organizational aspects of culture. Whether the content of Cochimi culture was equally similar is difficult to say because of the melting away of the people. At any rate the question arises whether Cochimi and Seri are not historically connected, especially as both their languages are related to Yuman, whereas all other Sonora tribes are Uto-Aztecan. The connection seems the more possible in that southwest of Tiburón lies San Esteban Island; beyond that, San Lorenzo; and beyond, the great peninsula. The open-water distance nowhere exceeds fifteen miles. This is a difficult but not impossible gap to cross on cane rafts; and the Seri have skilful knowledge of currents and winds. The passage across the Infernillo between mainland and Tiburón is little more than a mile at the narrowest point, but they often paddle five in their open boats to take advantage of weather conditions. The Seri remember navigating to San Esteban, and there is historical mention of crossings of the Gulf.

The final evidence for or against derivation of the Seri from Baja California will probably be linguistic, and if, as seems possible though doubtful, Cochimi speech can still be recorded in the peninsula, the answer may be definitive. The materials at present available

197 are inconclusive. Some of the outstanding speech similarities and
 171 differences are given in a section of the present paper; a fuller presentation will be made in a subsequent classification of the Yuman languages.

171 The Yuman tribes of the United States are better known, and there are published or collected accounts of the Diegueño, Kamia, Cocopa, Yuma, Mohave, Maricopa-Halchidhoma, Yavapai, Walapai, and Havasupai. These fall into two groups, culturally: the farming tribes of the Colorado (and Gila) bottomlands, and the gathering tribes of the desert and semi-desert of Arizona and southern California, the latter again affiliating with those of northern Baja California, such as the Kiliwa and Akwa'ala-Paipai. As might be expected, it is the desert Yumans of Arizona who show the greater number of resemblances to the Seri and fewest differences.

The Pima as the immediate neighbors of the Seri, and the Opatá and Cahita tribes beyond, ought to show many similarities with the Seri, plus differences due to their agriculture and activities like weaving which are normally encouraged by sedentary habits.

114 Such are some of the indications as to the history of the Seri and their culture, as discussed more in detail below so far as the preliminary data available allow. Further and intensive investigation
 121 is obviously needed. On the side of material life, Mr. Davis' studies
 122 ought largely to fill the need. For social and spiritual culture, the work will be difficult. It is not that the Seri are unwilling, but that they are inaccessible and hard to communicate with. The obvious procedure would be a study of their speech until it served as a medium. In that way both their language and their culture could be recorded hand in hand. But the obstacles are numerous. The island is thirty miles long by twenty wide. There is not a roof on it. The six summer months are extremely hot, and, along the coast, said to be almost insufferable from gnats and mosquitoes. Most of the few water holes are inland; the Seri live, except during the cactus and mesquite harvest, scattered in small settlements along the shore, often several miles from water. There is no communication across the strait, except by open boat, subject to weather conditions; and then it is twenty miles to the nearest house and a hundred to a town. Life on the island would be both harsh and monotonous to an unusual degree. Nor can the Seri as yet be studied by taking one or two of them to civilization for a prolonged stay. They soon become restless and homesick. Added to all this is the fact that their Spanish, though reasonably fluent in some cases, is ungrammatical, and would hardly serve for securing paradigms or accurate translations of texts; and while able to endure hardships, the people are not accustomed to steady work or mental concentration. The difficulties would not be insuperable, when the destined linguist-ethnologist undertakes the task; but he should not under-rate them.

601	seks	older brother (of man or woman)		
	eXa"s	younger brother (of man or woman?)		
	l'q'de	younger brother of woman	rec. 'l'pák	(older sister of man)
	huf'a'k	younger brother (reference, not address?)		
	emys'a'k	younger brother (term of endearment, cuando contento)		
	ekô'me	younger sister (of man)		
	etks	older sister of woman	rec. lca'k	(yagr. sister of w.)
	ema"dx	father's older brother	rec. ek-ma"á(x)	(man's y. br.'s child)
	e'ite	father's younger br.	rec. eká'tes (ekô'pao?)	(man's o. br.'s child)
	w'yak	father's sister	rec. icók	(woman's br.'s child)
	etma"dx	mother's older sister	rec. etama"á(x)	(woman's y. sis. ch.)
	inta'k	mother's younger sis.	rec. epxae	(woman's o. sis. ch.)
	exak	mother's brother	rec. e"ak	(man's sister's child)

All cousins, cross and parallel, are said to be brothers and sisters. The cases used as tests did not suffice to determine whether the names used depend on the respective ages of the cousins or of their parents.

eqéqt	man's parent-in-law	rec. lqaga'm	(son-in-law)
lqo'péc	woman's father in law	} rec. lqa'mác	(daughter-in-law)
lqémác	woman's mother in law		
lqo'mui	wife's brother	rec. eqtañqwa'l	(man's sis. husband)
eqmaXá'te	wife's older sister	rec. etmaXém*	(wom. y. sis.'s husb.)
ika'ite	wife's younger sister	rec. imaqa'te	(wom. o. sis.'s husb.)
eqwaq	husband's sister	rec. ikók	(wom.'s br.'s wife)
lqma"eX	hus.'s older brother	rec. eqmaXét	(man's y. br.'s wife)
lqé'ite	hus.'s younger brother	rec. lqo'toc ha'te	(man's o. br.'s wife)

* Term of endearment, when drunk; otherwise they do not speak.

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There is no word for child's parent-in-law (consuegro).

That a man distinguishes his son and daughter but a woman calls them by a single term, is a Yuman trait.

The number of sibling terms is greater than among the Yumans. The Diegueño-Kamia agree with the majority of Californian tribes in having four terms: older and younger brother and sister. The Yuma and Mohave have three, older siblings being merged; the Papago, two.

Six uncle-aunt terms, allotted as among the Seri, prevail through southern California, including the Yuman tribes; also among Walapai-

Havasupai. This therefore looks like a trait of Yuman origin. The Papago go farther, with eight terms. 171
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The Seri habit of calling cross cousins siblings prevails through central and northern California alongside the trait of designating them by uncle-nephew terms. All southern California, including the Yuman tribes, has special cross cousin terms. The Walapai-Havasupai combine the last two methods.

As compared with the three Seri parent-in-law terms, the California Yumans have two, the Walapai-Havasupai one. The twelve Seri sibling-in-law terms are most nearly approached in California by the Yuman Kamia, with seven. The Yuma have five; the Mohave, like the majority of Californian tribes, three. The Walapai-Havasupai, like the Hopi and apparently the Pima-Papago, have reduced separate terms for both siblings-in-law and children-in-law to very few.

Calendar and Astronomy

One informant said there were 12 moons in the year; another, 6. The list obtained consists of 12. Of these, about 6 refer to seasonal events, especially those concerned with food; 6 to constellations. This type of calendar resembles that of the Walapai-Havasupai. 805
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1. June, eko'slaX hi'caX, mesquite ripe.
2. July, antia'ila hi'caX, grass green, rains.
3. August, soxwo'mal, or xacuxe'mal. (cf. 7), (certain stars) not yet visible (before dawn); tunas.
4. September, ke'to-ya'o, (stars of that name) appear; cold begins.
5. October, e'-ya'o, constellation jackrabbit (e') rises in morning.
6. November, na'pXe-ya'o, constellation buzzard (na'pXe) appears (in morning).
7. December, xasoXwe'mal mo'e (cf. 3; verified) (certain stars) not yet visible.
8. January, koyaXca'k, certain stars just begin to show; small sea-turtles appear.
9. February, koyaXa'ku, larger turtles appear.
10. March, eXno'laan't hi'caX, eel-grass sea-weed (xno'la) "appears." See below.
11. April, iqá'tmu hi'caX, sharks (a'qát) come.
12. May, ema'memo hi'caX, pitahaya ripe (ema'm was given as ripe fruit of sahuaro, pitahaya, etc.)

Some of these names appear to be merely connotive of the events to which they refer. The seasonal happenings would probably be more truly placed if the calendar fell a fortnight to a month later, beginning in June-July or July instead of June. This would put the beginning at about the summer solstice, and might account for the statement that the "year" had six moons. The list was recorded on

805 February 28, 1930, which the informant (correctly) declared to be
821 the first of a new moon. He also said it was eXno'laa't, with which he began his list. This would roughly equate moon 10 with March, as per the list; but when asked about the edible "seeds" of the eel-grass, he stated that these were due next month.

Unfortunately, the informant who stated that there were six "months" in the year was not questioned further. He may have referred to a calendar of six seasons like that of the Lower Californians.

171 The upper large star in Orion (Betelgeuze) is an antelope; the
821 three of the belt, mountain-sheep; the three of the hilt, an arrow; Sirius, a dog following the sheep.

The Pleiades, kná'mk, are a woman (xmām, kmām) with children, who came outdoors to urinate.

Ursa Major is a sahuaro or pitahaya fruit-gathering crook, a pole with a bar diagonally across the end.

Kwe'pituX, quail (*codorniz*, qwe'pt) is a constellation.

Suxmi'ka, a man carrying a harpoon (*lanza*), may be Scorpio.

There are constellations Jackrabbit (é'), Buzzard (ná'pXe), and kē'to, according to the calendar. These rise before dawn about March 1. Clouded skies prevented their being seen several mornings. A few days later, at 6 a. m. (7 a. m. Mexican time), Altair was visible well above the horizon; this may be Buzzard — compare Luiseño Buzzard-Altair.

Polaris was pointed out in answer to the question if there was a star that did not move.

The sickle of Leo was not recognized (Walapai-Havasupai, hand).

Of these, Orion-Mountain-sheep, Ursa-crook, Pole-carrier-Scorpio (?), Buzzard-Altair occur among Yuman tribes as far away as Diegueño, Walapai, Havasupai.

Myth Fragments

1.

539 People were born in a cane, the Seri in one joint, the Mexicans, Americans, Chinese in others, separate from each other. God (Dios, Yos) came along here from south, then went east (?), setting signal smokes; the Seri alone did not come to him, therefore have nothing.

2.

Coyote was trying to catch ducks. As he jumped, they flew away and he landed in the moon, where he is visible now.

3.

Death was caused by Coyote and Konté'tXiat (*pinacate*, an insect that stinks, turns his black belly up, dung-beetle?). Coyote

- 789 Some shamans display their ability to hold live coals in their mouth.

Taboos

- [88] At first menstruation, the girl eats nothing (!) for 8 days, only drinking water. For 4 nights a *fiesta* is held for her, men and women dancing in a circle, anti-sunwise. She is outside the ring. Her head is not covered. San-pit roasting was unknown to the informant.
- 784
- [84] At menstruation a woman drinks hot water. She may cook for others. She may not eat deer meat.
- [84] After childbirth, both husband and wife eat only *atole* (gruel) and water, he for 4, she for 8 days. She may not work at all, he only a little, such as getting wood, "hunting" as necessary, etc.
- [86] There is no puberty ceremony for boys. Nothing is said to be known of any rule forbidding a boy to eat of the first game killed by him.
- [224]
- [83] Continnence before hunting deer was not observed. Nor was there any special treatment or respect due the deer carcass. It is said that deer meat could not be left behind unless there was too much, but this is probably a statement of practise rather than a taboo.

Dances

- 535 Besides the girl's puberty dance, the Seri also had a scalp dance. Only the frontal piece of the scalp was used. This was hung on a pole. Men (armed) and women danced together around it. If the scalp fell down, all would die.
- [727]

Dances seen were solo on a plank laid over a shallow pit. Several singers sat by, beating or rattling anything convenient. Each song and dance lasted scarcely three minutes. The tempo is fast. The step is a quick double shuffle with alternate feet. In one type, the dancer held to a stick with one hand, his body and hanging arm remaining as motionless as possible. Another type was without the stick, the dancer holding a gourd rattle and keeping his body bent forward somewhat.

- 534 Rattles are of gourds, c'Xec, on a stick, or of cocoons, Xekak'ntla. Deer-hoof rattles were denied. The cocoons are on a band worn below the knee. The Yaqui-Mayo wear such knee-bands of cocoons; and sometimes of deer-hoofs. The Gila Pima also know the cocoon band.
- 171

Various Religious Items

- 276 *Datura* (toloache, jimsonweed) does not appear to have been used. Even the plant seems unknown, although it is said to occur in the Seri range.

778 Rain making seems to be by amulet rather than by direct shamanistic power. For instance, Antonio Herrera wears a small object

789

524 Dice are three splints of cane; tapering toward both ends, nearly flat. The concave inside is greenish white, the outside darker. The count is: 0 insides up, win 4; 1 inside up, win 1; 2 insides up, lose 1 and play; 3 insides up, lose 4. The 3 splints are stacked together, then thrown endwise against the palm, a piece of turtle shell, or anything similar, so as to fly forward and scatter on the ground. (Some players probably acquire a degree of skill in making the canes fall right.) A player repeats until he throws 2 whites or insides. For points scored, he draws lines on the ground in front of himself. His opponent erases his lines as he wins, or adds to them as he loses, until he himself is ahead, when he begins to mark his own lines. Ten points wins the game. A stick is then set in the ground by the winner, who goes on playing the next game. That is, if he has 8, and throws 4, he sets up his stick, erases 6 lines so as to start the new game with a credit of 2, and throws again. The Seri perform these additions and subtractions with the rapidity of a practiced white man.

A ring of people may play at once. Their scoring in relation to one another was not ascertained, but it is presumably each from his neighbor, with the totals shown by sticks.

Since with fair throws the losses in this game must equal gains, a lead of 10 over an opponent is as much as could expectably be played for if the game were not to be unduly protracted.

526 Football race is played with *palo fierro* balls, perhaps 3 inches in diameter, one to each side of 4 runners. The ball may be moved only with the foot. The race is along the beach, where cactus and brush do not interfere. The distance, according to places named to Sr. Thomson and known to him, is about 6 miles. The men on a side relieve each other in informal relays; usually only 1 or 2 finish. The Seri once went north to play the Papago this game, but lost.

[645]

Shinny is a woman's game, preliminary to the football race. Four women to a side carry sticks with which they try to throw an 8-12 inch hoop to a goal mark at the end of a short field. Behind each side stand the 4 men runners who are to race with a ball.

Notes on Material Culture

482

[171]

Women carry loads on their heads with a ring; men with the *pén*, Spanish *palanca* or lever, a stick over the shoulder, with load hung from each end. These are the usual Sonora and Sinaloa Indian ways of carrying.

516

The Seri sit and lounge randomly. The men squat, occasionally cross the legs, put them sidewise, or sit with one knee up. The women wear long cloth skirts, but apparently sit just as variously.

714

Body armor, *naítanika p*, with sleeves and helmet, and a shield. *saXe'tiX*, both of hide, were worn. The shield was described as 4 or 5 feet high, roof-shaped toward the front. It is not clear whether

sounds like an expectable enough mythic idea, but seems involved with McGee's dubious conceptions as to totemism, discussed below. 114
1173

The two-pointed fish-spear, with serrated points 6 inches long and spreading 5°, seen by Hardy (McGee, p. 193), is interesting because seemingly unreported in or near the area. 114
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"Fishing" with staked pelicans who are then fed by free birds, is authenticated by the statement of Venegas for lower California, (McGee, p. 193). 226
231

No fish nets, hooks, or lines were seen by McGee among the abandoned effects on Tiburón (p. 194). This is in accord with my observation. The abundance of sharks may interfere with net or deep water fishing.

The bow (p. 200) is of *palo blanco*; the release (pla, 28, 29), Mediterranean; the archer's position (pl. 29), with elbow above head, suggests a quick downward shot at a target or game lying on the ground not far away. 114
411

Mesquite, according to McGee (p. 207), is ground on the metate. Sr. Thomson told me of its being pounded in a hole in the ground. The Seri gave me the name *a'kara* for what I understood to be this earth mortar. According to Sr. Thomson's description, the flour from the first beans cakes and lines the cavity firmly, so that the bulk of the material is secured quite cleanly. In general, mesquite is mortar-pounded rather than metate-ground by the tribes from whom we have records, as is expectable from the woody nature of the beans. 114
252

McGee (p. 207) noted the *viznaga* cactus, *Echinocistis*, as rare in the Seri habitat, presumably owing to its use for water by the natives. I made the same observation on the mainland, but Sr. Thomson stated that along the roads the plant is being gathered for candying. 114
137

The one basket described by McGee (p. 208, fig. 24) is bundle-coiled and plain. The only one I saw in use among the Seri was ornamented with a plain reddish band. Sr. Thomson presented me with two which bear patterns (fig. 13), and showed me a photograph of a collection made by Mr. Davis for the Museum of the American Indian, Heye Foundation, nearly all of which were decorated, some fairly elaborately. Several of these are shown by courtesy of that institution in figure 12. As McGee observes, there is obvious resemblance to Southwestern baskets; especially of the Papago, Pima, and Apache. Southern California basketry is less similar. That of Baja California is unknown from specimens, though the mention of water-tight vessels used for winnowing and parching suggests a coiled tray of Seri type. The surviving tribes of Sonora other than the Seri use few baskets distinguishable from those of the non-Indian population. 114
285
[171]

114 The Seri "second harvest" of cactus seeds (p. 209), which Ba-
 262 gert and Clavigero also describe from Lower California (p. 211) is
 171 found also among the American Pima,⁴ and is therefore likely to
 514 have prevailed as far as *Cereus* fruits were a principal food supply.

The ground-squirrel is not eaten by the Seri, the badger not by the Baja Californios (p. 212).

McGee gives a valuable percentage estimate of Seri food composition: land game, large and small (including 6% of stolen stock), 21%; pelicans, other waterfowl, and eggs, 13; sea turtles, 25; fish, 15; shellfish, 10; cactus fruit, 9; other plants, 6; miscellaneous, 2; total animal, 84; maritime, nearly two-thirds. My impression is that clams, other mollusks, and crabs constitute more than a tenth of the total consumption. Clams especially can usually be obtained at low tide when wind and water prevent other food taking. I should also be inclined to raise the proportion of plant food, especially mesquite. The use of agave was almost certainly limited chiefly by the supply. Sealions, porpoises, and occasional whales could perhaps hardly be accounted for under the two percent of miscellaneous. On the other hand, deer are evidently taken only occasionally, and the figure for turtles seems too high, these animals being absent from Seri waters for months in the year and always free-swimming. McGee appears to have over-emphasized the importance of the turtle in Seri thought as well as life. I would incline to estimate the proportion of animal food in native times, before domestic animals could be preyed on, as rather under three-fourths of the total; of maritime, as perhaps three-fifths. Even these figures might be high for the bands primarily resident on the mainland, with free access to the mesquite thickets of the lower Sonora and Bacuachi (Bacavachi) courses, and the countless cactuses.

114 A double-bladed paddle pictured by the Dewey-Narragansett
 171 expedition of 1873 is reproduced by McGee (p. 219, fig. 28) without
 501 comment. This type of paddle is established for the Seri, Santa Barbara islanders, and San Francisco Bay Indians; then apparently is lacking until the Eskimo-Aleutian area. Among the Chumash it is native and associated with a plank-built canoe. On San Francisco Bay it was used with the rush balsa, and may or may not be due to Aleutian sea-otter hunters introduced by the Russians. It seems possible that the Seri and Chumash occurrences would prove connected by occasional use in Baja California, if we had fuller data, since some of the natives there went several leagues out into the open sea. We are so accustomed to think of the two-bladed paddle as an adjunct of the specialized kayak, that it too impresses as a complicated device, inappropriate with a simple raft. As a matter of fact, wherever scarcity of wood, or lack of skill and usage in working it,⁵ resulted

⁴ Russell, BAER 24:71, 1908.

⁵ Cf. The Valley Nisnon, UC-PAAR, 24:255-290, 1929.

in a paddle blade being cut separately from the shaft, the inventive step from attaching one blade to attaching two blades would have been insignificant—in fact, would be an improvement or variation rather than an invention. The determining factor as to its adoption would probably be the type of navigation as set by water conditions. This is borne out by the distribution of the double paddle, which clings to areas of open salt-water navigation or large bays approximating open water conditions. On rivers and lakes the double paddle would rarely help and often be in the way. In this way the varying association with skin boat, wooden boat, and raft boat seems accounted for. Another factor must be size of the vessel navigated. A broad or high canoe would scarcely allow of alternate paddling on both sides. This may be the cause of the absence of the implement on the Northwest Coast. Whether the Arctic and the California-Seri occurrences are to be historically connected, must probably be left an open question for the present. An answer in favor of connection will evidently depend on the establishment of sufficient other connections to set up a favorable presumption. Until then, the considerations just mentioned make the possibility of independent origin equally plausible.

The single-bladed paddles seen by McGee (p. 219) and myself were two-piece and lashed with nails. McGee is more interested in balsa propulsion by recumbent women with hands, shells, or unhandled blades. That such crude devices were used along shore or in bays often enough to be mentioned, is wholly in line with the conspicuous Seri indifference, slovenliness, and lack of standards; but it is also obvious that real paddles being known and made, these would be the ones taken on open sea voyages of a dozen miles in a region of notably variable winds and currents. The Seri are never fools in practical matters within their compass; and they could not have acquired their indubitable navigating skill by letting their women do most of their paddling with bare hands. The one woman I saw aboard was carried as a passenger across the Infiernillo.

What is typical of Seri habits is that the harpoon shaft is also used for poling, and the harpoon cord as anchor rope, tow-line along shore, sheet rope, and for tying a blanket to a mast and pole to serve as sail; just as the hailer of a leaky skiff is an enamel-ware plate or pot employed at other times for food. The whole harpoon, including the rust-iron point, but dismounted, seems regularly to be taken along on a transport voyage.

The Seri houses I saw opposite Punta San Miguel were like those described by McGee (pp. 221-223): long, narrow, low, and open at least at one end; but they were unroofed. There was also one of double length, and another "joined obliquely"—that is, annexes occupied by younger kin and their families. The lengthwise double house was open through, though constricted at both ends and the

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middle. Two imperfect wind-breaks of brush, less than a quarter of a circumference in curvature, stood near the camp.

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On the subject of textiles and textile clothing (pp. 171, 225-232), McGee is necessarily vague on account of lack of specimens. He says that native kilts, from waist to knee, were either of birdskin or "a rectangle of coarse textile fabric," "woven probably on some primitive device"; that it is practically certain that a long-sleeved, short-bodied shirt or wammus is "of local aboriginal design" and was "made primitively of haircloth or native textiles"; that the probable genetic series of Seri garments was: 1, the pelican-skin robe used as a kilt, 2, the textile shirt, 3, the textile kilt; and that Seri fabrics, according to a Mexican informant, "resemble coarse bagging, and are woven or netted quite plainly."

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Human hair cord could be netted, or twined in double twist into basket-like bags or mats; it could hardly be woven into cloth without a loom. The same holds of *istle*, agave fiber. Bast of willow, cottonwood, beanstalk, such as was spun and twined, and perhaps woven on a limited scale, by the Colorado river Yuman tribes, was not available to the Seri, though they may have had nearly equally soft substitutes, even in their desert. Cotton they did not have. *Istle* is a strong, harsh fiber, excellent for cordage, nets, open-mesh bags, and the like, and still largely used in Mexico for such purposes. It would also serve well for fringe-aprons, for which the Lower Californians used it. A fabric from it would be rough and stiff, giving little warmth, not very satisfactory for a kilt, and quite unserviceable for a fitted garment like a sleeved shirt. Cotton was the prevailing garment material found along the coast by the first Spaniards, north up to the Cahita (Ka'ita, namely Tehueco, Mayo, Yaqui); here *istle* became more prevalent though cotton persisted; but the type of garment is not clear.

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As to looms, *istle* is today woven into carrying bags on a heddled belt-loom by the Nahuatl-speaking Indians of Sinaloa. The Mayo weave woolen girdles on a similar loom. They also weave woolen blankets on a demountable horizontal loom, the warp passing continuously around the two heavy yarn beams. It is not clear whether this is a hybrid Spanish or a purely native apparatus. The Opatá and Pima Bajo loom is not known. The American Pima weave cotton both on a belt-loom and on a staked horizontal loom, but with warps in a single plane.⁶ It is difficult to imagine these looms existing among the Seri, except the first mentioned; and this would not yield them much in the way of garments. There is no reason why they should have worn more than the Lower Californian women's fringe-aprons, supplemented perhaps by birdskin blankets and loin covers. They no doubt secured occasional garments from neighboring tribes, as they gladly but irregularly wear those of whites today; and this

⁶ Russell, BAE-R, 26:148-153, 1908.

is what their "shirt" (McGee, pl. 29) probably was. The fabrics of McGee's Mexican informant may refer to gunny-sacks made over into improvised imitations of civilized garments; or to single-element carrying bags. It is entirely possible that contact with the cloth-weaving tribes of Sonora long ago induced the Seri to shrink from habitual complete nudity; but it is difficult to imagine them producing even a coarse wearable cloth. McGee's interpretation of the historic sequence of Seri garments is of course wholly speculative.

The cradle shown by McGee (p. 226, fig. 30) consists of a kite-shaped hoop with eight sticks tied across it and a lashing thong passed back and forth across it half-a-dozen times. Even allowing for some slip of the parts in transport to Washington, this specimen is quite typical in Seri disregard of evenness, neatness, order, or finish. The Yaqui cradle illustrated by Hrdlička¹ consists of eight or nine lengthwise sticks or canes twined close together. The Lower Californians used a basket or a turtleshell. The Gila Pima and river Yuman cradle is of "ladder" type, and therefore similar in structure to the Seri except that it lacks the point at the bottom and has the sides parallel; it also carries a hood of wickered or twilled aplints. As regards basic structure, one form of Maidu cradle is most similar to the Seri; just as the plan of the Yaqui one reappears among Miwok, Yokuts, and Mono a little further south in California.² It appears from this irregular distribution that so simple an apparatus as the open or flat baby-carrier, which can be just as serviceable without a definite technique or style entering into it, is likely to vary locally without much significance, and that its forms will indicate historic connection only when they are parallel in a number of details. In these respects it resembles house types. In both these objects, new "inventions," certainly of detail elements and perhaps of basic structure, seem to be readily made and adopted.

McGee's finding (p. 247) that the Seri are "not habitual stone arrow-makers" has a parallel among the river Yumans, and, at least partially, among the remaining Sonoran tribes. His conclusion (p. 259) that the *yerba de la flecha* (magot, *Sebastiania bilocularis*?) was an Opata but probably not a Seri arrow poison, seems sound. The plant was shown me on the island, and the Seri knew it as venomous, but volunteered nothing as to using it on arrows.

That the question of Seri cannibalism must be left open, with a preponderance of evidence against the practice (p. 263), also seems a conservative judgment.

As to shields, McGee learned of loose pelican pelts and turtleshells (p. 264), of armor and a large upright shield of hide. Both accounts may be right, one referring to emergency pick-ups, the other to prepared defence or attack.

¹ AA 2, pl. 9, 1904.

² BAE-B 79:626, fig. 48, pls. 59, 60.

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182 to prepared defence or attack. The Seri mode of life and induced temperament must have led to many instabilities, with make-shifts often actually more in use, but finished or efficient types of artifact seemingly latent and sporadically emerging in the stream of their culture. Thus, the shell alongside the double-bladed paddle; plain baskets seen in use, but a series patterned in a definite style being produced as soon as their manufacture was profitable; unroofed and roofed houses. Similarly, the two-pointed fish-spear and olla carrying-net, which neither McGee nor I saw, but which may persist in memory in the culture ready for revival on occasion.

[595] Somewhat similar, perhaps, is the status of polygyny, which prevailed in McGee's day (p. 279) a half generation after a disastrous war, but was not the rule, or was successfully disavowed, in earlier times and to-day.

Errors and Misconstructions

114 McGee dwells at length (pp. 152-156) on three strong trends
171 of Seri life and culture: the pedestrian habit, accompanied by quite
481 exceptional fleetness; a hand and tooth sense with corresponding absence of tool sense; and a race sense unalterably opposed to mixture with alien blood.

All the Sonora and Southwestern Indians were and largely still are fast and sustained long-distance travelers on foot. There is nothing to show that the Seri were superior to the others. The one time they remember having met the Papago in a foot-hall race, they were beaten. Yaqui warfare is a record of at least equal endurance and ability to evade superior civilized forces. In fact the faculties of the Yaqui are the more remarkable in that they have always been settled farmers and often moved in larger bodies. The incredible fleetness of the Seri was probably most manifest in mesquite thickets and on rocky ground. That they should outrun a horseman on an open plain is the sort of tale that one hears on every frontier and which the more intelligent frontiersman does not take seriously.

114 Hand and tooth sense was undoubtedly strong among the Seri.
171 The same thing, especially as regards food, is reported for the Lower
181 Californians. But the inference of lack of tool sense is erroneous. Knives are prized by the Seri, and, along with nails, axes, and the like, are handled with a direct, crude effectiveness. The crudity is due to the lack of standard, order, and interest in finish which pervades all Seri cultural manifestations and which rests ultimately on their essential isolation and self-sufficiency in an unusually forbidding environment. What a Seri is interested in is not a neat job but one that will substantially meet his immediate need. Their modern plank boats are weak in plan, badly joined, and always leaky; but they serve. A structurally stronger boat would probably profit nothing.

ing, because it would be swamped in a sea which it could resist. The joining and calking are always carried far enough that the boat can be bailed faster than it leaks. That the Seri prefer to bail rather than to finick over joints, is a matter of preference. Most of our real frontier life runs on much the same plan, though sprung from a tradition of intrinsic standard and provided with a superior tool equipment. Tribes like the Walapai and Papago, who live in nearly the same desert, show much of the Seri combination of technological crudeness and effectiveness. They do make an exception in basketry, which is what has chiefly reached our museum cases from their culture; but the Davis-Heye collection shows that the Seri too can make baskets of unsuspected quality. My impression, based on the way the Seri handle their knives, boats, bows, and the like, is that they have excellent practical mechanical sense, but that their standards are astonishingly different from our own. Most people that depended so much on sailing their boats as the modern Seri do, would not be content with two sticks, a blanket, and a harpoon line. But, given the willingness to operate with this equipment, very few would be as successful in quickly rigging and skilfully handling the sail. And sailing is something the Seri have recently learned or evolved. They are the frontiersmen of native culture: hardy, rude, unorganized, practical, efficient; but, like our own frontiersmen, in no sense only half emerged from the tool-less animal. McGee was so inspired by the desire to find ultimate "primitiveness" among the Seri that he often ignored the tremendous effect of their habitat which he so well observed and described. After all, in his day cultural evolutionism was still in vogue.

As to race sense, McGee seems partly but only partly right. Chico Romero of his own accord asked me if other Indians had venereal diseases, and on the return question replied that the Seri were entirely free from them. I also saw and heard of no half-breeds. On the other hand, Chico's historical tradition told of the violation and keeping of captive Tepoca women, and since his own son was descended from one of them, in the second generation, Chico's mother-in-law must have been a Tepoca. McGee's "alien conjugal union" as the "blackest crime" (p. 11) is therefore an exaggeration, and his informant's statement that a Papago woman captive among the Seri never could have had children because she was an alien slave (p. 278), must rest upon a misunderstanding.

The groom's continence for a year after marriage as a moral test before admission to full husbandly status (pp. 280-3), is probably a matriarchally colored fantasy based on another misunderstanding. As already mentioned, Chico was interested, but mildly ribally amused, at the idea when it was put before him as a foreign Indian custom. He reacted like the average white man under the circumstances, not in the least like an actor skilfully feigning ignorance.

ages (pp. 164-167), and Hardy's story of his being painted is interpreted as ceremonial adoption (pp. 277-8). My conviction is that the Seri paint primarily for adornment, and that further significance is either secondary or absent. When I reached the island and about thirty people, including visitors from other settlements, were gathered to receive and inspect me, all the younger women and one or two adolescent boys were freshly and very neatly painted. After all, their ragged cast-off civilized garments were nothing to make a show with on a state occasion. In former times, the everyday-wear pelican robes would not have served much better. The ochre red, dumortierite blue, and gypsum white pigments however gave a chance for decoration and display. Three days later, when our party was an old story, some of the faces still carried paint, but it was worn, defaced, and bedraggled. It seems unlikely that people should greet strangers by decorating themselves with representations of lineage totems which they at the same time denied or tried to conceal from their knowledge. The construal of Hardy's painting as an adoption-rite rests on the same blood-kin interpretation. It was probably nothing more than an act of friendliness tinged with the simple humor of which the Seri have a strong sense.

Face painting in fact seems to be the chief if not only purely aesthetic expression of Seri culture, their mode of life and psycho-physiological habits being such as almost to prohibit any other form of art. In this painting, on the other hand, they have achieved a high degree of stylization and taste. The designs I saw were throughout in the manner illustrated by McGee in his plates 13-16, 18, 20, 22, 24-26.

Ethnographically, the interest of this style lies in its similarity to the river Yuman face paintings. The Seri first of all specialize on a horizontal bar across the nose and cheeks, immediately below the eyes; in addition to this, there may be vertical elements dependent over the cheeks. The design deliberately breaks across the natural lines of the face in such a way as to orient itself with reference to the eyes without touching them. Bordering or enclosing of the eyes is avoided; neither are planes like the cheeks, forehead, or chin felt as fields to be filled in with decoration. The fundamental plan attacks the face at once drastically and subtly. That the style has both feeling and rigor is shown by the fact that none of the endless variations of color and design detail depart much from the basic scheme. That this scheme is old is shown by Hardy's description of a century ago. It is a true art of high order within its narrow compass.

The Mohave paintings* are somewhat freer and more variable, but also less classical or chaste stylistically. The transverse element

* Kroeber, *Handbook*, BAE-B 78, Aug. 26-27, 1925. With the Mohave, contrary to the Seri, the vertical elements predominate over the horizontal. The Gila Pima style (Ransome, pl. 55), and the Havasupai (Appler, AMNH-AP 39:195, 1928), are also related.

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- 171 below the eyes and the verticals below them are predominant in most cases. Even where the design extends above the eyes, it does not
302 cover the forehead, but terminates in a straight edge paralleling the one below. Where the chin is involved, the Mohave bring solid triangles up from the jaw and then leave the chin itself blank, instead of accentuating its contour with color, as a less sophisticated style would do. Like the Seri, the Mohave are a people with deficient material culture and little dress suitable for display. The two tribal styles are unquestionably connected in their history.

COMPARISON AND PLACE OF SERI CULTURE

It may seem premature to attempt to place the Seri culturally with reference to other Southwestern tribes, since only a fraction of their and other Sonoran cultures is on record. But it does seem justifiable at least to forecast an answer to the problem of how far their culture is an exceptional growth or explainable by the generally accepted principles of historical origins and contact and environmental adaptation. 171

Any present comparison must be made primarily from the Seri outward. Were one to start with a more fully known tribe, too many absences of traits would be ambiguously construable as lacks either in Seri culture or in our knowledge of their culture. Positive Seri traits on the contrary, though less numerous, have definite meaning according as they occur or are known not to exist among other, better-known peoples. List 1 accordingly compiles the occurrence elsewhere of characteristic Seri traits, those peculiar to them, at least within the Southwest, being signalized by an asterisk.

For Lower California, data are about as meager as on the Seri, and, except in the extreme north of the peninsula, can probably no longer be secured. This is specially unfortunate because the environment, subsistence habits, and culture level of the Lower Californians were obviously similar to those of the Seri. To facilitate such comparisons as are possible, I have compiled in List 2 the principal specific known traits of peninsular culture. Those recorded by Haegert seem all to relate to one group, the Waicura in the south—but not the extreme end—of the peninsula, and have been subdivided as they recur or seem not to recur among the Seri. The data preserved by Clavigero and Venegas refer to several groups and are only partially localized as to occurrence. They have therefore been presented separately within the list. It so happens that nearly all of them are not known to be Seri.

List 3 bears indirectly on the Seri through the Pima, chief immediate neighbors of the Seri. The specific ethnological records of the southerly or lower Pima have never been systematically compiled. The upper Pima consist of some Sonoran divisions pretty well missionized and absorbed; of other divisions who have gradually come to be called Papago; and of the Gila River or United States Pima, who were brought under mission influence relatively late and imperfectly. Since nearly a century ago the Papago and Gila Pima have been able partly to revert to their old culture, while their kinsmen in Mexico have continued to lose theirs. It is unfortunate that the one systematic ethnologic account of any Pima group, Russell's monograph, deals with the peripheral Gila division. However, these Gila Pima are obviously similar in some respects to their neighbors, the Colorado River Yuman tribes. List 3 has therefore been drawn up

- 171 to distinguish Yuman-Pima resemblances (which may have originated with either group) from Pima traits which are not River Yuman; and, to balance the picture, from River Yuman traits which are not Pima.

Distribution Lists

LIST 1. OCCURRENCE OF KNOWN SERI CULTURE ELEMENTS AMONG OTHER TRIBES

[Abbreviations: LC, SC, CC, Lower or Peninsular, Southern, Central California; RY, Colorado River Yuman tribes—Mohave, Yuma, Cocopa, Maricopa; W-H, Walapai, Havasupai, or both; API, American or Gila Pima; Pue, Pueblo.]

Bodily

Head carrying by women. Yaqui-Mayo, RY, Pue, API.—Abs. SC, LC. Seems correlated with pottery water vessels.
Pole carrying by men. Y-M, Sinaloa. Absent in United States, probably in LC (single-load pole mentioned).
Net carrying-bag. LC, SC.—CC, W-H, baskets; RY, API, mesh frames.
Nose piercing. RY, LC.
Face paint, horizontal across nose under eyes. RY; some W-H. Vertical below eyes; RY, W-H, API.

Food

Little or no boiling of food. LC.
Both sexes cook. LC.
Re-eating cactus seeds. LC, API.

Technology

Unroofed house, windbreak. LC.
Cane balas, LC; rushes, SC, RY, CC.
Double-bladed paddle. Chumash, CC (San Francisco Bay).
Fish harpoon. LC, CC; SC? Absent, RY.
Two-pronged fish spear. LC? (Clavigero, "borquilla").
Long self-bow. LC, SC, RY, Yaqui-Mayo.—API, Pue, less long.
Reed arrow, foreshafted. LC, SC, (RY), Pue, Yaqui-Mayo, Mex.—Arrow-wood, API, RY.
Mediterranean release. SC, Apache.
Pottery. Yaqui-Mayo, API, RY, W-H, Pue. Abs. LC; SC (part), CC (part). Scraped, NW Mexico, W-H, Pue, CC. Paddled, RY, SC, API.
Multiple foundation coiled basketry. SC, CC; prob. LC; Pue, RY rare; API, W-H, three-rod.
Body armor of skin. W-H.
*Long skin shield.
Human hair cord, etc. LC, SC, API. Not RY, W-H, CC, Pue.
Kite-shaped stick cradle. CC. The related hoop type is W-H, ladder type API, RY, SC.

Kinship

Many terms. RY.
Reciprocity. RY, W-H, SC, CC; weaker, API, Pue.
*Numerous (8) sibling terms.

*Numerous (12) sibling-in-law terms.—SC, CC, W-H, API, Pua, few terms for connections by marriage; Kamia 7, Yuma 6, Mohave 2. (71) ●

Age distinction of parent's siblings of same sex as parent. RY, W-H, API, SC.

Social

Wife purchase. SC, W-H.—Absent, RY, API, Pua, prob. LC.

Patrilocal residence. SC, RY, W-H, API.—Matrilocal, Pua, Navaho.

Parent-in-law avoidance, LC, CC, Navaho, Apache.—Absent, SC, RY, W-H, API, Pua.

Sibling-in-law avoidance. LC (?).

*Respect shown elder siblings in avoiding sexual references.

Death

Burial. API, Pua, some LC.—Cremation, SC, RY, W-H, some LC.

All property destroyed. SC, RY, W-H, API.—Not all, Pua.

Name of dead taboo. Same as last.

Games

Hidden-ball game. Pua, API, W-H, RY. Aba SC, CC.

4 tubes. Pua, API, Aba, RY.

Guess for third tube. Pua, API (?).

Score 10-6-0-4. Pua, API.

Tubes marked end-middle-both-none (or 2 ends). API, (Pua, on dice).

Tubes named old man, etc. API.

Dice—three in number. Pua, Navaho, W-H (recent?). Aba, API, SC, CC.

Cane splints. Pua.

*Score 4-1-1-4.

*Tally on ground, no counters.

*Erase (subtract) in tallying.

Foot-ball rare. SC, API, Pua. Aba, RY, W-H.

Ball. SC, API. Stick instead of ball, Pua.

Four runners to side. Pua. One or indefinite, SC, API.

Shinny, with *hoop. API, double ball. Aba, RY.

Played by women. CC, API. Men's game, RY.

Constellations

Mountain-sheep, Orion's belt. W-H, RY, SC (Diagnose).

Antelope, Betelgeuse.

Arrow, sword hilt.

Dog, Sirius. Walapai, Sirius or Bellatrix is coyote.

Cactus-fruit gathering crook, Ursa Major. W-H.

Pole carrier, Scorpio (?). W-H.

Burnard, Altair (?). SC.

*Quail.

*Jackrabbit.

Woman with children, Pleiades. All Yuman, Hacha, meaning usually unknown; Luis, girls; Walapai, coyote's or bat's daughters.

Not moving, Polaris. W-H, API.

Calendar

Year begins with cactus harvest. LC, API.

171 Year of 12 moons. CC, W-H, API, some Paa; Seri, Diegueño, 6 repeated.
Absent, LC.

Part of these named from constellations. W-H.

Less than 12 periods (7)—LC, 6; SC, Luiseno, 3, Juaneño, 10.

Ritual

Girls' puberty fast. SC, RY, W-H, perhaps LC.—API, seduction, no fast;
Paa, lacking.

Girl's puberty dance. SC, API, CC, perhaps LC.—Absent, RY, W-H, Paa.

Menstruating women forbidden deer meat. SC, CC, W-H.

Victory dance, scalp on pole. SC, CC, RY, W-H, Paa. Abs. API, perhaps LC.

By both sexes. CC, RY, W-H, Paa, API.

In circle. CC, W-H, API, Paa.

*Falling of scalp fatal to dancers.

Gourd rattle. RY, (W-H), API, Paa.

Cocoon rattle on knee. Yaqui-Maya, API. On handle, CC. Neither, SC,
RY, Paa.

Dancing on plank over pit, singly. CC (foot-drum).

*Holding pole.

Ritual number four. RY, W-H, API, Paa; prob. LC; SC, variable.

*Soul is blood.

Rain-making with amulet. CC, API.

Shamanism

Spirit quest. W-H. Absent, RY, API, Paa.

Ventriloquism in caves. LC, (W-H). Absent, SC, CC, RY, API, Paa.

Spirit enters shaman (possession without utterance). W-H. Absent, RY,
API, Paa, CC.

Shaman lays on hands, breathes. RY.

Shaman sucks or blows through tube or hands. LC.

Myths

Death from coyote and insect. CC.

Coyote's child first victim. CC.

Fire from fly. SC, RY, API.

Sun's daughter. W-H.

Gambling for body. SC, RY, W-H, API.

LIST 2. LOWER CALIFORNIA TRAITS OCCURRING AND LACKING
AMONG THE SERI

A. Weicurn traits which are also Seri.

Cane balsa: used in open sea.

Curved wind-break, unroofed, as dwelling.

Nose pierced (allegedly).

Turtleshell receptacle.

Little division of labor; cooking by both sexes.

Pitahaya not preserved.

Pitahaya seeds re-eaten.

Fishing with harpoon only; no nets or hooks.
 Singing and roasting on open fire; no boiling of food.
 Mother-in-law taboo.
 Shamans use caverns and ventriloquism.
 Shamans suck or blow.
 No special shamanistic treatment for rattlesnake bite.
 Girls' puberty ceremony.
 Women's child-bed restrictions ("ceremonies").
 Readiness to laughter and merriment.
 Inclination to pilfer, lie, shrewdness, and filth.

17/ •

B. Waicuru-Seri traits found also over a larger area.

Men wear hair long.
 Net-like carrying-bag of agave fiber.
 Bow long and nearly straight.
 Fur-shafted cane (reed) arrow.
 Earth-oven for agave.
 Hair cut in mourning.
 Long distance travel by running.

C. Waicuru traits not occurring or not reported among the modern Seri.

Wood raft.
 Buckskin sandal.
 Complete absence of roofed dwellings.
 Absence of pottery; gut or bladder for transport of water.
 Turtle shell only cradle.
 Women's front and back apron.
 Men carry on heads, women with tumpline.
 Forehead protected by high piece of buckskin.
 Men cross, women stretch legs in sitting (Seri variable).
 Litter for transport of sick.
 Ear piercing and enlarging.
 Absence of fermented drink.
 Marriage to wife's sisters.
 Shamans of both sexes.
 Shamans wear human hair mantle or wig.
 Shamans blow or suck through tube (Seri, hands).
 Shamans extract pain object.
 Bleeding and ligaturing for sickness.
 Boys' puberty ceremony.

D. Lower California traits (other than Waicuru), mostly Cochimi or unlocalized, not occurring or not reported among the Seri (Olavigero, Venegas)

Cabin-like arbors (*cuparrados*) as house.
 Peric: cape or mantle (*capotillo*) in addition to woman's front and back apron.
 Cochimi: front apron of reed, back of buckskin.

● [7]

North of Cochimi: cape of otter, rabbit, or jackrabbit fur (pelt); woven rabbitskin blanket?

Buckskin sandal.

Gualeura of Loreto: head net.

No fermented drink.

Winnowing and parching trough (bates) of water-tight reeds (basketry) or palm wood (carved).

Round (called basketry) dish (plate or cocodilla, Cochimi adda), for food, drinking, and woman's hat.

Agave fiber net hung from forehead or pole to carry children (except Pericó).

Pericó: cradle a deeper trough (bates).

Agave fiber net (from forehead?) for carrying (fruit)

Deer head decoy.

Carved throwing stick for rabbits.

Rabbit nets.

Fish nets.

Bales of 2, 5, or 7 light logs, middle longest; used to 4-5 leagues from shore.

Bone awl.

Gualeura: marriage ceremony is exchange of a trough and carrying net.

Other tribes: dance at marriage.

Monogamy; only Pericó polygynous.

Husband has absolute authority over wife.

Levirate.

Kars (and noses) of boys pierced.

Pericó: creator called shaman.

Gualeura: creator of food (pitahaya and fish) comes from north, on east coast teaches the making of shamans' mantles, returns north.

Cochimi north of 38°: impersonator of creator comes from hills, with men eats food prepared in arbor by women. Similarly, return of dead from north impersonated, women retire, men eat food.

Shaman's wig or cape of human hair, from head to feet.

Pericó: add head-drum of deer tails to same.

Cochimi: add two belts of deer hoofs to same.

"Conjuring" with boards (tablitas) bearing designs.

Curing by working through joint of cane.

Burial or cremation (as convenient? varying according to locality?)

Mourning commemoration, rude figure of dead made of branches on pole, landed by shaman.

No moon-sequence calendar, but six named periods in year.

LAST 2. CULTURAL REMINISCENCES AND DIFFERENCES OF GILA PIMA AND RIVER YUMAN TRIBES

A. Gila Pima and River Yuman common traits

Wooden mortar, with long wooden or stone pestle, for mesquite.

Absence of basketry seed-beater.

Type of planter and ("weaving sword" shape) wood-cutler (Russell's "digging-stick" and "hoe").

Flood irrigation by one Pima village and Kwadhak (canal irrigation by other villages). 171 ●

Wheat growing very early of importance.

Arrowweed bins or storage baskets.

Arrows of arrowweed, without foreshaft or head.

Few stone arrowheads.

"Potato-masher" type of war club.

Paddle for pottery making.

Cradle of wooden "ladder" type, with wicker basketry hood.

Metate flat, not grooved, with long mano; fairly shaped.

Head ring of willow bark for carrying.

Stone axes not made (prehistoric ones used by Pima for metate dressing).

House earth-covered, resting on 4 forked posts (Yuman, side posts too and rafters; Pima, bent willow frame).

Sweat-house lacking.

Man's breech-clout, woman's apron kilt, of inner bark of willow.

Men's hair long, unbraided, in "akeins" or gummed pencils.

Women's hair loose, cut in front.

Hair treated with plaster of mud and mesquite gum.

Face paint mostly arranged vertically below eyes.

Nose piercing of brave men.

Low aesthetic sense or interest, lack of finish in manufactures.

Flageolet (flute)—Pima from Maricopa.

Coiled basket used as drum—Pima from Maricopa.

Ring-and-pin game of gourd or pumpkin rings, with spiral scoring design.

Girl's puberty rite, 4 days' seclusion (Pima also dance, Mohave not).

Dance formation: men and women in two lines, back and forth (Pima, puberty dance).

No wife purchase.

Patrilineal and patrilocal descent.

Patrilineal sibs (Pima, 4 or 5, under moieties; Yumans, many); these have totemic reference but not names; designated by common names used by members (for fathers by Pima, for women by Yumans).

Slaves (Pima, children; Yumans, young women).

Chief's liberality.

Secondary names of men often refer to female genital organs.

Rigid taboo of names of dead.

Salt forbidden as ritual restriction.

Absence of altars, of specific dance regalia, and of masks (except Pima Navito, imported?).

Shamans do not seek dream or trance.

Shamans brush and spray in curing.

Shamans killed for failure.

Myth episodes or tendencies:

 Finding middle of earth.

 Four tribes at first.

 Rivalry of two first great gods.

 Coyote sent on errand, fly makes fire, cremation (Pima actually bury!).

171 Coyote leaps over two short men, steals heart of corpse.
Lengthy pseudo-historical tales of group wars.

B. Gila Pima traits not found among River Yumans

Canal irrigation.

Fermented drink of giant-cactus fruit or agave (northwestern limit of alcohol).

Pottery patterns after firing, of mesquite gum, slightly refired.

Coiled basketry; materials Typha, willow, Martynia.

Twilled basketry with lida.

Oval sifter of parallel rods.

Storage baskets, coiled, of willow and wheat straw.

Kicho carrying frame: 4 sticks, hoop, half-hitch agave-fiber net (Mohave, 2 looped sticks, wound with cord).

Cotton, loom weaving, blankets, patterned belts.

Outer frame of house of bent poles.

Flat-roofed shade earth-covered.

Foot-ball race (Yuman, present but uncharacteristic, favorite game hoop-and-pole).

Women's double-ball shinny (Yuman single-ball by men).

"Relay race" by teams (not clear: Russell, pp. 173-4).

Dice with scoring circuit; giant-cactus wood, marked middle-end-both-none.

Hidden ball game of cañute type, 4 tubes marked middle-end-both-none, called old man, old woman, score apparently 10, 6, 4, 0 (not clear, Russell, p. 177), 100 grains to game, stick set up at winning each game (Yuman, simple hiding in sand).

Sororate.

Moieties.

Sibs not exogamous (?).

Sib designations refer to words used for father.

Purification rite for year-old children.

Naming ceremony with godparents (Spanish?).

Youths trained four days in tribal legends.

Tear salutation.

Musical rasp.

Dance in circle, arms over neighbors' shoulders.

"Name song" begging.

Girls' puberty dance.

Girl at puberty, menstruating woman, work basketry.

Victory dance apparently without scalp pole.

Navitco rain dance (from south?).

Shamans extract disease object.

Shamans trained by being "shot" by older shamans.

Women shamans cure only abdominal disease of men and women.

Curing by songs of animal diagnosed as causing disease.

Curing by masked Navitco.

Stone tablets.

Omina, feather-stick offerings.

Calendar sticks (year tallies).

Most of origin myth except as mentioned as similar to River Yuman.

O. River Yuman traits not found among Gila Pima

House completely roofed with rafters.

Large fishing scoop of sticks.

Guessing game without tubes.

Kohot chiefs social entertainers and managers.

Same name borne by all women of one sib.

War as sport, with challenges, champions' contests, close-in mass fighting.

Cremation.

Mourning accompanied by singing, begins before death.

Mourning commemoration, with images and mimic battle.

Intra-tribal group disputes settled by regulated pushing match and stick fight contests.

Ceremonial induction of berdachs into status.

Women may change sex socially.

Giri at puberty covered with hot sand.

Datura eaten by individuals (Pima, one song reference, Russell, p. 299).

Soul loss cause of disease.

Individual dreaming as basis of most religious functioning.

Dreaming largely of myth period, world origin, one sacred mountain, dying god, culture hero.

Many myth episodes and trends.

Song cycles: Tumanpa, Vinimulya, Nyohaiva, Raven, Salt, Deer, Turtle, Chuhuscha, Cane, Goose, etc.

Choices of cycles sung according to individual dreamer or learner, rather than function or occasion.

Musical style (Hersing, Journ. Am. Folk-Lore, 41, 1928).

Interpretation of the Comparative Data

Seri culture resemblances would expectably run along one or more of the following lines:

1. With the adjacent tribes of Sonora, of which, in default of direct knowledge, the American or Gila Pima may be taken as the nearest though imperfect representative. However, a considerable gap undoubtedly existed between these tribes and the Seri through the possession by the former of developed agriculture and cloth weaving. This gap would at once be apparent in a comparison made from the point of view of the Pima, Opata, or Yaqui. It need not exist from the Seri angle if Seri culture were essentially a reduced or impoverished copy of general Sonoran culture.

2. With the non-agricultural desert tribes of peninsular California. In this case, strongly preponderant similarity would be con-

clusive proof of a common origin or active communications across the Gulf of California.

3. With the Yuman peoples other than those of the peninsula. Among these the Colorado river tribes are agricultural and otherwise specialized. Of those who farm sporadically or not at all, the Yavapai, Walapai, and Havasupai²¹ of Arizona are geographically nearest and in a similar though less extreme environment.

4. Of more distant groups, those of southern California come into consideration because of their semi-desert environment, lack of agriculture, contacts with the Yumans, and through including, in the Diegueño, a Yuman people. The central Californians and Pueblos should give a measure of basic Seri relationships respectively toward the Pacific coast and the classical "Southwest" of recent archaeology and ethnology. On the Apache, unfortunately, there are inadequate data.

The entries in list 1 summarize as follows:

	Agree- ments	Disagree- ments	Surplus of Agreements
Walapai-Havasupai	29	7	22
Gila Pima	31	12	19
Southern California	27	12	15
Lower California	18	3	15
Central California	18	5	13
Colorado River Yumans....	22	16	7
Yaqui-Mayo	7	0	7
Pueblo	18	12	5

Peculiar to Seri, (*) , 10

Rather surprising is the high total of resemblances with the Gila Pima. It suggests that with systematic data available, the Papago and Sonora river Pima would show a culture fairly close to that of the Seri, except for agriculture, weaving, etc. Presumably the Opatas and Yaqui-Mayo would be only a little farther removed, though in their case river valley habitats would add differences to those due to greater distance.

The peninsular California relations are somewhat puzzling. The greater number of listed Seri resemblances with southern as compared with lower California is obviously due to fuller data. The ratio of agreements to disagreements is probably more significant: about five to one for the peninsula, but two to one for southern California. The resemblance would be still greater if traits directly reflecting the environment had been included: such as cactus fruit diet, or use of turtle shell receptacles. Certain more detailed considerations arising from list 2 are discussed below.

²¹ The Havasupai farm on a considerable scale, but appear to be essentially a Walapai offshoot who have been able to add agriculture. For six months in the year their life is practically indistinguishable from that of the Walapai.

Very notable is the high resemblance to the Yumans of Arizona, especially in contrast with those of the Colorado. Not only are there more agreements with the Walapai than with the Yuma and Mohave, but the excess of resemblances over differences is about three times as great. The divergence between the two Yuman groups would be still wider if the comparison had been two-way instead of one-way, on account of the river tribes possessing whole systems of cults, clans, etc., of which the Walapai, Havasupai, and presumably Yavapai are almost as free as the Seri. 171

The central Californians are geographically so remote that the only significant figure in their case seems to be the fair number of positive resemblances.

The Pueblo low net excess of agreements is surely significant. Had the comparison been the other way around, it would have yielded an overwhelming excess of disagreements.

As to Sinaloa, the rather scant and uncompiled data indicate its culture, from about the Sinaloa river southward, as probably in the main a dilution of that of central Mexico, just as its prevailing speech is generally accepted as having been a dialect of "Mexican" or Nahuatl. However, occurrences like that of the *palanca* or carrying pole in Sinaloa and among the Seri are evidences of connection in that direction also.

List 2 is a check on the Lower California part of 1 by reversing the comparison. On its face, it diminishes the Seri-Baja California resemblances. Evidently the Gulf formed a serious barrier to communications, and if the Seri came out of the peninsula, it was a long time ago. Puzzling is the fact that the Waicura, three to four degrees of latitude south of the Seri, show an excess of agreements; the Cochimi, directly opposite, an excess of traits not reported for the Seri. Different authorship of the Waicura and Cochimi records can hardly explain all of this difference. Quite surprising is the northern Cochimi account of a woman-deceiving impersonation both of the creator and of ghosts, which inevitably suggests a secret society of the Patwin-Pomo-Yuki type of north central California.²² One would certainly not expect such a cult organization among the scattered, chronically hungry Lower Californians.

One tentative clue suggests itself. It is conceivable that the Seri came to Sonora from the peninsula when the Waicura, or a culture of their eighteenth century type, were still situated about latitude 29° or 28°, being subsequently dispossessed by Cochimi, or by cultural stimuli from the north, which resulted in richer local growths than have been taken for granted for the area. I am not ready to take 174

²² The human hair wigs or mantles which covered the whole person, like the central Californian feather mantle or cape of the moki, etc., are another parallel, but are reported for the peninsula generally.

174 sides on this hypothesis. Intensive analysis of the data may strengthen or eliminate it.

• 171 List 3 bears on the Seri indirectly through segregating Gila Pima culture into those constituents which are also River Yuman (including the Maricopa) and those which are non-Yuman and therefore likely to be old or generic Pima. It must be remembered that the Gila outpost division of the Pima nation were in immediate contact and friendly alliance with the Maricopa, whose dialect and customs indicate them as a river Yuman tribe rather recently extruded from the lower Colorado valley. The Maricopa are first mentioned by Kino and his associates, just before 1700, as on the Gila. It seems unlikely that they left the Colorado more than about a hundred years earlier. However, this would give three centuries of close association of the two tribes, before which there may have existed a period of less specific communications up and down the Gila.

The array of Pima-Yuman traits in section A of list 3 is rather impressive. Several have a somewhat wider distribution, but even such traits are usually centered, or most intensely developed, in the Gila-Colorado tract. It is probable that the Pima and Yumans contributed about equally to what they share. Traits like agriculture, irrigation, and pottery, which extend thousands of miles southward but stop with or just beyond the Yumans, have certainly moved from the Gila to the Colorado. On the other hand, in some cases the Pima admit adoption of Maricopa elements. The myth-episode of the making of fire by the fly and coyote's theft of the heart must have originated among the cremating Yumans or southern Californians and been adopted with something of a wrench by the interring Pima.

Sections B and C of the list give the traits not shared by the two groups. The Pima list is about twice as long as the Yuman one. This appears to be due only in part to the fullness of Russell's monograph. Pima culture seems quantitatively the richer, River Yuman the more specialized. It will be noted that the Yuman traits include very few in material culture or technology, interest in which, as in ritual, seems to have been suppressed by the Yuma and Mohave in proportion as they became absorbed in their peculiar war customs and their individualistic dream religion. Again, as Herzog has pointed out, River Yuman music has developed an unusually well marked style of its own.²²

The bearing on the Seri is this. Half-a-dozen non-Yuman Gila traits (list 3B) recur among the Seri—more if the several features of the dice and hiding games are counted separately; none of the non-Pima River Yuman traits (3C) are Seri. But this does not mean that the Seri are closer to the Pima than to the Yumans generally, because the desert Yumans, as represented by the Walapai and Hava-

²² JAPL 41:183-221, 1928.

supai, possess as many Seri traits (list 1) as do the Gila Pima. In other words, Seri culture is definitely related both to Pima and to the generalized, basal, and presumably original Yuman culture—which is mainly situated in a similar environment. On this foundation the River Yumans then reared their own culture through the adoption of agriculture, the reduction of technology, and special growths in spiritual culture. This River Yuman culture however did not appreciably influence the Seri, because its localized specializations remained impracticable, unacceptable, or unknown to them.

Here ends the comparative discussion of Seri culture. Tentative as the findings are, I trust that the examination has at least helped to shed light on problems of the area to which the Seri belong.

SUMMARY AND CONCLUSIONS

121 Knowledge of the Seri is still in its infancy. McGee's actual
 114 observations are excellent but slender in range. He has interwoven
 them with conjectures, some of which are erroneous and others un-
 proved and doubtful. Intensive study of the Seri will be difficult,
 chiefly for physical and practical reasons, but, to judge from such
 explicit data as are in hand, should prove them to be a tribe unusually
 interesting indeed, yet fundamentally similar to others in the same
 region. So many of their known traits are shared with one or another
 of these tribes, that it is practically precluded that complete investiga-
 tion will leave the Seri as a unique people or even as one set widely
 apart, except in their historical fortunes.

13 The most distinctive thing about the Seri is their environment.
 182 This is extremely arid and lacking in water supply, but not desert
 in the ordinary, untechnical sense. Botanists describe it as a succu-
 lent vegetation desert. It is fairly well stocked with food inland and
 rich in food along shore. This territory is able to support a fair
 sized population, but scatters it and keeps it from settling down. The
 land is also inhospitable and difficult to strangers who are not ready
 to adopt the Seri mode of life. This fact has helped preserve Seri
 ethnic integrity and culture to an unusual degree. A considerable
 fraction of original Serian territory is wholly unoccupied by civiliza-
 tion today, a full three centuries after its frontier was settled. The
 Indian neighbors of the Seri, all being farmers in fertile valleys, had
 no more incentive or ability than Caucasians to penetrate Seri terri-
 tory sustainedly.

171 Across the Gulf, the peninsula of California presents a very
 174 similar environment, and was inhabited by tribes of very similar
 subsistence and residential habits, culture level, and temperament.
 But the Baja Californians differed from the Seri in being so situ-
 ated, with reference to the rest of the world, that the length of the
 peninsula cut them off, except in the northern portion, from nearly
 all outside relations. Each group in the peninsula thus had contacts
 and stimuli only from others of similar culture. The Seri, on the
 contrary, having long been surrounded on the landward side by
 peoples of higher cultural level, were able to exploit this difference,
 in part by adopting cultural traits from their neighbors; and perhaps
 still more largely by preying upon them economically; while their
 habitat afforded them a refuge from destructive reprisals. Such may
 have been the condition in pre-Columbian days. At any rate it has
 been such since the coming of the Spaniards, and has made the
 "history" of the Seri different from that of the Baja Californians.

174 Three islands, Tilairon, San Esteban, and San Lorenzo, form
 stepping stones from Seri mainland to the peninsula. The water gaps
 between them are navigable to native craft and have been navigated

by them at times. This raises the question of whether the Seri may not have reached their habitat from the peninsula, or possibly the reverse. The solution of this problem depends on an analysis of full data on physical type, speech, and culture content, and only a partly conclusive answer, discussed below, can as yet be given. In general behavior and temperament, Seri and peninsular Californians seem to have been strikingly alike; but this fact can not in itself be construed as evidence of common origin, because the similar psychology may be largely determined by similar residence and subsistence habits resting in turn on almost parallel environment; much as pastoral nomads or mariners in whatever part of the world, and with or without historical connections, are likely to exhibit analogous mental attitudes in contrast with rural or urban populations.

In any event, it is wholly unproved that the Seri possess a native endowment which is more animal-like, more dominated by instinctive impulses and less capable of cultural development, than other peoples'. In fact the improbability of such an assumption is indicated by their possession of culture traits, like certain games and their kinship system, which they either share with neighboring tribes or have developed into rather high specialization. The meagernesses of their culture are therefore evidently due to factors in their particular history or geography rather than to congenital deficiencies or abnormalities. This does not mean that it would be easy to convert the Seri to the mode of life of Pima or Mexican. Habits of irresponsibility and unsettlement once established, even through part of childhood only, are notoriously difficult to alter. Witness the Gypsies. However, such practical habit difficulties are of course no evidence as to quality of endowment.

The modern Seri are the amalgamated remnants of some three or four of a half dozen closely related Serian groups formerly recognized. The preponderant one in the fusion of these groups is likely to have been that which held Tiburon and the fronting mainland, on account of better preservation of their numbers and habits in the relatively inaccessible island refuge.

Seri physique is distinctive in physiognomy, expression, and habitus, as would be expectable in a people sharply set off from its neighbors in practises and attitudes. The measurements available show no very marked differences of gross anatomy from neighboring tribes, either in stature, head shape, or nose proportion. The head may be somewhat rounder than among Pima and Yaqui; the difference in body seems more to be one of greater slenderness than of greater height. The Seri abilities to endure hunger and fatigue and to run great distances are faculties possessed by nearly all tribes of the southwest United States and northwest Mexico.

The Seri language is intrinsically and markedly tonal, more given to consonantal accumulations than the neighboring Uto-Aztecan and

1917 Yuman dialects, and possessed of some relatively rare sounds like *f*. It bears an indubitable relation to Yuman, as was assumed forty years ago, but the relationship is remote enough to indicate that the Seri have had a history apart from that of the Yuman tribes for a long time, estimable at a thousand years at the least, to judge by the rate of change of most languages. The Yuman idioms seem to fall into two primary groups, Yuman in the narrower sense, in Arizona, southern upper California, and northern lower California; and Cochimi in central lower California. On Cochimi, which is generally reputed extinct, data are very scant. If this group of dialects showed markedly greater resemblance to Seri than do the other Yuman languages, a derivation of the Seri from the Cochimi across the Gulf of California (or the reverse, if Cochimi proved more different than Seri from Yuman) would be an almost inescapable inference. Unfortunately, the available data are too scant to allow of a definite decision. On their face, they seem to make out Cochimi and the narrower Yuman group as about equally distinct from Seri.

171 Comparative analysis of the known specific facts of Seri culture, while impeded by inadequate information on many tribes, especially in Mexico, shows positive relations in all directions, but outstandingly with three peoples: the Pima, the Arizona desert Yumans, and the Lower Californians.

The Pima in question are those of the Gila river, the remotest of their nation from the Seri, agricultural, and demonstrably subject to some cultural affection by the Yuman tribes of the lower Colorado. Quite expectably therefore they lack many elements of Seri culture besides those which they share; not to mention a large stock of their traits not possessed by the Seri. Had we satisfactorily specific data on more southerly Pima divisions, such as those of the Sonora river, who were immediate neighbors of the Seri, there can thus be little doubt that an even larger proportion of the Seri cultural inventory would be found among them. More or less the same would probably hold for the Yaqui. These adjacent cultures would seem to have contained most of Seri culture plus increments such as agriculture, cloth weaving, and others.

The Arizona desert Yuman tribes, the Yavapai, Walapai, Havasupai, live farther from the Seri, in fact beyond even the Gila Pima. It is therefore significant that they show almost as many cultural agreements with the Seri, and fewer disagreements. They are perforce an almost non-farming population, except in a few spots. It is clear that they and the Seri have jointly preserved many features of an old, non-agricultural, desert-adapted culture. The Yuman tribes of the lower Colorado are much more different, though their geographical distance from the Seri is no greater. They possess definitely fewer and lack more Seri traits. This is not only because they

farm, but because they have secondarily specialized their culture away from the old Seri-Walapai substratum. 171 ●

The Baja Californians must be reckoned as having participated in the same basal, low-level, desert culture, though of course, like every other people, with certain variants and developments of their own. That we can name fewer Seri traits in their culture than in that of the preceding groups, is probably due to the less store of our knowledge of them. More significant of relationship is the smallness of the number of Seri traits which they are known to lack. It is entirely possible that if there existed adequate information for both sides of the Gulf, Seri and Cochimi similarity would prove to be the closest of all. But at present this possibility cannot be either conclusively proved or disproved.

Seri similarities with southern and even central California are fairly numerous, and can be attributed partly to the common non-agricultural subsistence, which would tend to induce the adoption or retention of similar cultural traits. On the other hand, the basic farming life of the Opata, Mayo, and north Sinaloan peoples must have operated at many points in the opposite direction in spite of their geographical nearness. Pueblo culture is so highly specialized that its mass would expectably show little kinship to Seri, and such is the trend of the available comparative data.

The Seri thus relate culturally to other peoples much as might be anticipated from their geographical position and subsistence opportunities. The Seri problem consequently has to be removed from the category of those which hold out a hope or illusion of being particularly significant for the solution of basic questions or broad hypotheses. It is essentially a problem of specific local ethnography, with wider significances revealable only by impartial comparative studies; but of special interest because of the relatively well-preserved status of parts of old Seri culture and the human appeal of three centuries of outlaw history. The thorough study of this culture will involve much grinding physical hardship and possibly some danger. It is to be hoped that when the work is undertaken, it will not be in a spirit of personal adventure, with emphasis on the external difficulties to be overcome, but with a serious desire and competence to secure facts and understanding. 121

ABBREVIATIONS USED

- AA—American Anthropologist.
 AMNH-AP—American Museum of Natural History, Anthropological Papers.
 BAE-B—Bureau of American Ethnology, Bulletin.
 BAE-R—Bureau of American Ethnology, Reports.
 JAPL—Journal of American Folk-Lore.
 UC-PAAR—University of California, Publications in American Archaeology and Ethnology.

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Food Habits

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The food habits of all but a very few of the insects are totally unknown to the Indians but they do have accurate and detailed knowledge of the food habits of fish. This is probably due to the great economic importance of fish to the Seris. They also have very full data for the mammals, including bats, which are said to be insectivorous. The responses varied concerning lizards and often did not parallel the situation in nature. In some instances, the acuteness of the observation was remarkable. Thus, the Northern Crested Lizard, *Dipsosaurus dorsalis sonoriensis*, which occurs on the sands of Rancho San Francisco, inland from Desemboque, has been mentioned as climbing trees after fruit. Even more unusual, the leopard lizard, *Crotaphytus wislizeni*, was said to feed on other species of lizards. And indeed, it is one of the very few species of lizard in the region which habitually devours others of its own kind.

Nesting Seasons, Eggs and Nesting

In most of these aspects of natural history the native information is quite deficient. In the case of birds, it is assumed that nesting occurs in early spring, that the eggs are laid a month later, that in another month the young hatch out and about the third month they fly from the nest. This sequence seems to represent a conventionalized idea rather than a reflection of direct observation. Another difficult question for them to answer, with respect to the reptiles, was whether the young are born alive or whether they hatch from an egg. Only a few of the species are correctly described, among them the rattlesnakes. Sharks and mantas are said to give birth to live young.

Guesses as to the number of eggs varied from fairly accurate estimates for some of the birds to rough approximations ("many") for some of the reptiles and most of the fishes. The knowledge of bird nesting habits was fair. The informants had no difficulty in pointing out the particular localities where one or another species of bird nests nor in the identification of the nest by its shape and construction. This was especially true of the cormorants, agrets, sea-gulls and pelicans. All these are either marine or shore birds as will be noted.

Animals: Venomous and Otherwise Feared

In contrast to the Mexicans, the Seris fear relatively few animals and they are almost always those which can inflict a vicious or toxic bite or sting. The Mexicans, on the other hand, are afraid of a great many animals. European folklore plays a part in this as does unfamiliarity with the desert and the consequent fear of it.

The Seris fear most the rattlesnake, both the Western Diamondback and the Sidewinder. These snakes, they say, bite with their fangs but the venom is located in the rear of the body, about two inches in front of the anus. A plant called "huaco" (?) is used as a remedy both in the form of a drink and as a dressing for the wound. The Mexicans claim this remedy is effective. The coral snake is also considered to be venomous although the Seris believe that its bite is fatal only to Mexicans and not to themselves (?). Most of the

625 other snakes are also viewed as venomous but are claimed to be of mild disposition and do not bite people.

Among the lizards, curiously, the one feared most is not the highly poisonous Gila Monster, but the harmless little gekko, Coleonyx variegatus sonoriensis, which lives in fallen and dried-up saguaro. The informants could not even be induced to touch specimens killed in alcohol. It is believed that this creature could kill humans either by contact or by allowing them to inhale its vapors which cause a fatal lung illness. This little lizard is reminiscent of the European salamander in some ways. The Mexicans call it locally "salamancosa", and attribute to it the same unpleasant traits which the Seris do. Since this little lizard does resemble the European salamander and the beliefs about it are quite similar to those in European folklore, it is possible that here is a case of a transfer of this folklore upon an animal of a different kind. These beliefs eventually perhaps diffused to the Seris.

A small desert night lizard, Xantusia vigilis, is also very much feared and is frequently confused with the gekko. It lives in an identical habitat. A toad, Bufo alvarius, is said to bite with its tongue and is supposed to be able to inject venom with it. Its blood and "milk" are also very toxic.

Several of the arthropods are believed to be dangerous. The Seris claim that the blood sucking cone-nosed beetle, Tritoma rubida, stings with its mouth parts and also causes an illness called gaxhi'i ve-hayen, which can be fatal to children. This bug actually is a vector of the Chagas disease and its repeated bites may cause a sensitization to them. But in this case it is impossible to tell which is the situation without a clinical analysis. Scorpions, which sting with their tails, are considered to be very dangerous. The Black Widow spider, which is very numerous in the locality, is also viewed as very toxic and is said to be sometimes fatal, although a few days' illness is all that its bite usually causes. The tarantula spider also bites but its venom is never fatal. The Sun spiders, Solpugidae, are venomous but their venom supposedly kills horses but not people. All of these spiders and their relatives, according to the informants, sting with the rear end of their body in wasp-like fashion. No medicant is applied on the bite, nature being allowed to take its own course in the recovery.

Concerning other animals, the sting rays are much feared because of the venom in their thorns and their ability to inflict a nasty wound. The bats, according to some informants, can cause disintegration of the body by spitting on it and they also have venom in their tongues, although this belief was not shared by one of the more sophisticated informants.

Only a few animals are considered to be dangerous to eat, owing to their toxicity. The toad is one and a little fish, Sphaeroides granulatus, is another. 171
525 of this fish it is said that "one hundred years ago, a man ate one; he died", hence the avoidance. However, rattlesnakes are eaten with relish; only the head and the part of the body where venom is believed to be located being discarded.

The above discussion suggested some of the differences in the attitudes toward animals between the Mexicans and the Seris. While the former fear many,

171 the latter are largely unconcerned with by far the greater majority of them.
 825 If there is any magical importance attached to any of the species, it has not been discovered in the course of this field work and this fact has been corroborated by other recent observers.³

Summary

182 Extensive field work of this sort has many ramifications. One of the main
 825 items investigated has been the acuteness of the native observation of animals. In the case of the Seris, this knowledge progressively increases both in volume and in accuracy with the increasing economic importance of the group. The mammals and large fish are the best known followed in order by birds, reptiles, smaller fish, insects and marine invertebrates. It is also obvious that local ecology, habits and anatomy of the various species of animals set definite limitations upon observation. Lack of understanding of the hibernation of reptiles through the winter is a case in point. Another example is in the Seris' inability to distinguish between the sexes of birds. Purely cultural factors are also potent as can be seen in the standardized responses to the questions about the age of animals and the development of birds. Seri knowledge of animals is remarkably free from mythology, although a number of animals are known to have had mythological significance in the past.

825 There is little fear of animals except of those which are actually dangerous.

An interesting fact emerges from the comparison of the particular aspects of the knowledge of natural history. Namely, that this knowledge is not always symmetrical in that some facets of natural history are far better known by the Seris than others. An excellent illustration is provided here in the complicated ways of sexing animals, in their extensive knowledge of the food habits of some of the animals and their ecological environment, and by their very limited ability to guess correctly the age of animals.

Not all of these differences can be accounted for in natural terms and it is suggested that the answer to this asymmetry lies, perhaps, in the cultural factors unaccounted for in this study. In spite of their dependence upon a relatively few economically important species of animals, the Seris do make use of much of their animal environment in their diet, as would be expected of a marginal people who still live today in a fishing and gathering economy.

FOOTNOTES

- 122 1. This field work was -as possible by research grants from the Department
 114 of Anthropology, University of Washington. Most of the work was done in Desemboque, Sonora, during the summer of 1953 with some additional work there in May 1955.

For much help in carrying out this field work I am indebted to my friend, Leo Sandoval, a school teacher in Desemboque.

Elsewhere (Ascher 1961) I have disputed this portrayal of the potential of existing ethnography, citing examples where qualitative and quantitative models have been constructed from ethnography and suggesting that one task for archeology is to codify the literature in a manner useful to itself. Regardless of doubts about existing ethnographies for archeological purposes, the worth of future ethnography for archeology will depend on the acquisition of the relevant kinds of information. Although discussion on the subject has been recorded (Tax *et al.* 1953: 229-232), no specific guides have been produced. This paper provides and discusses an example, which can be used as a paradigm, model, or guide of the kind of information to be collected from ongoing communities which would be of general value for archeology. The subject culture is that of the Seri Indians of Sonora, Mexico; the example describes a persistent trait complex associated with fishing for the Pacific green turtle, with particular emphasis on one trait in the complex, the harpoon foreshaft. 121

EXAMPLE FROM THE SERI INDIANS

The Seri, who numbered approximately 200 individuals in 1960, occupy a band of coastal desert about four miles wide and seventy miles long in the state of Sonora in western Mexico. The band extends along the Gulf of California from Kino Bay in the south to Desemboque in the north, opposite the largest island in the Gulf, Tiburon. Although the region is desert, with an estimated average rainfall of less than eight inches per year, falling mostly in July and August, it is comparatively rich in succulents and small land mammals. The Gulf forms a natural trap for large fish and marine mammals and is a breeding ground for the Pacific green turtle. The scantiness of fresh water has constituted, in the past and present alike, the single crucial limiting factor to agriculture and human occupancy. 13

In the past the Seri may have comprised from four to six tribal groups, and they were certainly numerically larger, with a maximum estimated population of 2,000 (Kroeber 1931: 53, 30). Until very recently they also occupied Tiburon Island, and at some more remote period they extended south, north, and east over a territory whose bounds are uncertain (Kroeber 1931: 5). On the basis of linguistic change, Kroeber (1931: 54) calculated that the Seri could have inhabited this general region for 1,000 years. It is uncertain whether the original occupation stemmed from Baja California via the Gulf of California or from the north and west via an overland route or routes (Kroeber 1931: 39-51). The first contact with Europeans occurred as early as 1540 (McGee 1898: 51). 174

In culture content the Seri are most closely affiliated with the Pima (Kroeber 1931: 51), but they do not share the practice of agriculture with them or with their western neighbors. The Seri are primarily fishermen; secondarily they gather the fruits of succulents; and to a still lesser extent they hunt game. McGee (1898: 214) 101

412 the stimulus of the tourist trade, has kept this
285 tool alive. Another survival from McGee's times
301 are *Olivella* shell necklaces.

Seri Antecedents and Relationship

174 For complete lack of archaeological information, little can be deduced about Seri antecedents. Speculations can be made only on the basis of similarities of their post-historic cultures with the cultures of the surrounding tribes.

- 171 Individual traits between the Seri and their neighbors show discordant connections. Comparative data assembled by Kroeber, Beals and Driver & Massey suggest almost equal possibilities of derivation from the Cochimi, the Gila, Pima and the Yuman tribes but favor much less connections to the south. Much is made of the basketry. Archaeological basketry has been unearthed since the work of Kroeber and Beals was published (Massey, MS.), but it is different from the Serian. Seri basketry shows closest relationship to Pima-Papago complex (Malkin, MS.). But part of this may be not only post-historic but certainly very recent and is hardly an argument in favor of the Pima-Papago connections.
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Kroeber (1930:5) thought that on the face of it, the Seri showed greatest affinity to the Cochimi on the grounds of their general development of economy—the hunting and gathering subsistence. But he also pointed out that relationship with the Cochimi may rest ultimately on the linguistic analysis if the Cochimi language can still be recorded—which is most dubious.

[P. 8 B]

* 825 ster is really a curious case. The Seris deny that it is venomous or that it bites. Reasons why this really venomous beast is considered harmless by the Seri is probably twofold. First, it is quite rare in their territory; the area of Kino and Desemboque is near the southern-most boundary of its distribution. Second, it is sluggish and slow moving and quite unaggressive, and, as the Seri know it, it probably never has bitten any of them within their memory.

To break them down by the groupings, the toxic species are six species of snakes, four of lizards and the toad, and the non-toxic, all of the turtles, 10 species of lizards and one snake. It is clear then that almost all snakes are considered toxic, although in one instance, the red racer, there seems to be disagreement on the subject. But when the figures are broken down to the fatalities, this pattern disappears. For here, only both rattler, *Xanthusia*, *Coelonyx* and *Crotaphytus* are considered potentially fatal to the Seri, and the sixth, the coral snake, is supposedly fatal to the Mexicans but not to the Seri. There are good grounds for believing that, under certain circumstances, the bite of both rattlers, especially of the diamond-back, can be fatal and there are cases on record when a young child (Seri) from Desemboque and a young man were killed by the large rattler—within the past few years (1950-1954). The sidewinder is slightly less feared, no doubt because it is smaller, but they think it does always cause illness. Both rattlers inflict the toxic bite with the two large teeth in the front, where the venom is stored. They both have venom also stored in the head and in the rear section of the body two inches or so from the anus. So, at least, the Seri think, and when they deliver the rattlers to the frying pans, they always are careful to cut off the head and the tail and throw them away. This belief in the location of snakes' venom in the head and the tail, in a variety of species and generally of snakes (whether actually toxic or not), seems widespread in a good many parts of the world in areas where snakes, especially the large ones, make up a favorite dish of the aborigines.¹² Of course, this belief in the location of the venom in the head and tail of the rattlers is also shared by the Mestizos of their area.

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* 825 The coral snake represents somewhat a special case and is a good indication that many such ideas may owe their origin to the actual observation. This snake is greatly feared by the local Mestizos and is considered by them to be at last as deadly as the rattlers, if not more. The Seris also think that it is venomous; they believe that it harbors venom in the head and tail and also that it inflicts venom with the fangs. But they also say that it does not bite as readily as the viper and that it is fatal to the Mexicans but not to the Seris. It is not hard to guess that the basis for this difference in the toxicity is the fact that the snake probably never has bitten any of the Indians. But the Seri

¹²I have observed this, by the way, among peoples of Victoria and Duala in the Cameroons—except that the belief there was associated with the large African rock python.

* 825 heard the Mexicans talk about the dreadful consequences of its bite, and they took them at their word!

However, it will be seen that not one of the snakes is considered to be dangerous in any way on mere handling of its body. Coral snakes, though actually potentially fatal, do not bite readily and often may be handled with impunity.

This then leaves the three lizards and the toad in the category of potentially fatal animals. This is mysterious because not one of these lizards is in any way harmful.

Of these, the leopard lizard (*Crotaphytus*) is dangerous simply through biting and through venom which it has in its teeth. The Seris seemed dubious, somewhat, if this beast could kill other men, but they were sure it could kill them (the Seris). They also denied that wild animals could die from its bite. This situation is difficult to explain except perhaps by an existence of some sort of myth connected with this lizard. It may be also that the vile temper of *Crotaphytus* when captured has persuaded the Seris that any animal so vicious must be dangerous.

[753] But the two little perfectly harmless nocturnal lizards, the gecko and the *Xanthusia*, represents a different stripe of danger, but they are feared just as much as any of the really venomous snakes (rattler) if not more. Neither of them will bite, the Seris say, but they'll cause an illness on touch which can be fatal and at best they'll cause an illness of the lungs which can also be fatal. In addition, touching them will cause flesh to fall off one's hands and body. This, the informants explained, was the reason why they were not eaten. That both of them are terribly feared, the gecko even more than the *Xanthusia*, I had examples galore. While collecting with the Seris in the dried-up sahuaros, we encountered a great many of these lizards after breaking up the logs. Invariably the Indians fled and retreated obviously alarmed at the sight of the wiggling little creatures and when I picked them up bare-handed they were altogether shocked. I could not persuade them to touch even later specimens killed in alcohol. Some showed clear fear of picking up or touching the vial in which these lizards were preserved. A good possibility is that this belief is in some ways connected with the European folklore about the salamander. The gecko is called in the local Spanish *salamancesa* which means salamander. And the salamander, in the European mythology, may inflict harm on people in the very same manner as the gecko is supposed to do. The Mestizos, a good many of them at any rate, also hold similar views. There is a general similarity in the appearance and outward behaviour of the gecko and the salamander and, perhaps, we have here a transfer of

[P. 30A]

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● [171] an idea from one animal to another.¹³ The *Xanthusia* does not share this similarity to the salamander in appearance, but it is found along with the gecko and behaves much like the gecko when exposed to the light. Hence, perhaps, comes the association.

I excluded here from the discussion the red racer because the notions concerning it are conflicting, with some informants insisting that it is toxic and can cause death and others that it is not. But all agree that it'll bite—and painfully so.

Finally the toad. The toad, although unaggressive and considered as such, is feared a great deal as a repository of all sorts of toxic traits. There was some disagreement as to its ability to bite, with some informants thinking that it does bite with its tongue, others thinking it can't bite at all. But all agree on the following attributes of the amphibian: venom in body, toxic on touch, always fatal to eat to most animals and to all men. In this the toad joins the gecko and the *Xanthusia*. [262] These too are believed to be fatal to eat and these three represent the only animals in this class that are considered inedible.

It is interesting that the list of toxic (though non-fatal) animals should also include the *Phrynosoma* although here there seemed to have been again disagreement between the informants. The lizard is perfectly harmless and actually will not bite even in self-defense. But the Seris say it causes swelling. [753]

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278 For the rattlesnake bite, the remedy is a plant called *Kásoz*. An extract of this plant is made after boiling it in hot water and then it is taken orally. It is also applied to the wound and, the Seris say, it must be taken all day long for a full day. The Seris take this when they are harmed by these snakes. This plant is supposed to be found in the mountains near Kino but not in the Desemboque or Tiburon area. But in addition to their own medicaments, the Seris, especially the younger fellows, will make use of the regular anti-venom available at the school or mission.

Attitudes Toward Reptiles and Amphibians

* 825 With the few exceptions, these animals are not particularly feared. Those that are feared are considered dangerous in some ways, and, in fact, most of them are either by their ability to inflict painful bite or by possession of venom. But otherwise, their attitude seems to be very much a matter of fact and one of unconcern, which seems to corroborate Kroeber's opinion of the Seris' psychological makeup in other matters.

¹³Since this has been written, I have plenty of evidence that the gecko is similarly dreaded in many parts of the world.

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worn. I have observed women wearing necklaces of the former and women and very young boys of the latter. The olive shell, incidentally, is made into two sorts, the natural, unroasted shells which retain a greenish-purple, mottled color and the white. The white pallid color is achieved by roasting the shells over fire. The necklaces are mostly made up of either colored or white but occasionally they may be made of mixed shells and then they are usually alternately interlaced, now with one, now with another.

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b) *Utensils*: Two species had been reported used as occasional drinking or dipping cups and spoons. *Lavicardium elatum* and *Ficus ventricosus*. *Ficus* is presently discarded, but the *Lavicardium* is still occasionally used so. There is no doubt that the incidental use of these shells increases during longer fishing expeditions when the Seris are apt to lose some of their gear.

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c) *Money*: Interestingly, the brown cowry was supposed to have been used as a means of exchange, as money—in the past. If this is so, then the selection of this shell for such purpose is not surprising considering its widespread use throughout the world.

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d) *Trade*: Altogether 12 species had been reported as traded off either in the past or present. The trade importance of various species of shells varies with the demand of the market and sometimes may be only sporadic and short-lived. Only a few of the species had been indicated as having been of any trade importance in the past, and it may well be that the Seris did not register the species which may have been briefly sold to and outsiders during the short-lived fads of demand. It may be said in general that the trade importance of the shells increases and that greater variety of them are exploited now than formerly. This is surely owing to the increasing accessibility of the Seri country and the increasing tourism, not only visitors from Hermosillo, but also from such far flung places as Tucson, Phoenix and even Los Angeles.

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In some instances, the Seris had no idea what the shells were sold for. The augur shell is on and off sold to some American traders who show up in Desemboque once in a while and for whom the Seri women accumulate these shells. But what uses were made of these, the Indians surely didn't know. Neither did they know what uses were made of the *Murex* shell and the *Turbo*, both of which were periodically sold in bulk to Hermosillo. On the other hand, they had some idea what uses were made of some other shells. *Pteria* and *Atrina* contain pearls and these are much desired. Especially the pearls of *Atrina* which are sold to the Mexicans or to the visitors for 25-50 pesos each and therefore have immense value, for the local market. The *Pteria* shells are said to be used for button making, and the Seris themselves claim that they make buttons of this shell. The most important of all, however, at least at the time of my visits in 1953 and 1955, was the olive shell. It was easily the most commonly and most numerous collected shell of all that the Seris ever collected. Owing to the scarcity of it in Desembo-

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INSECTS AND ARACHNOIDS

- 114 Altogether information has been collected concerning 92 species of insects, scorpions, ticks, myriapods and arachnoids.

Economic uses

- 262 McGee says that "good many insects" are part
[114] of the Seri diet, although he does not specify just which they were nor how significant. There is no doubt that in his days, the insects played some role in the Seris' food and that they were probably far more important in the distant past, in the XVIII and early XIX centuries, before large flocks of livestock, horses and cattle of the Spanish rancheros offered excellent opportunities to supplement the usual diet.

- [77] Of all this but minor traces remain today. The Seris even have forgotten which insects had been eaten by their ancestors. Apart from the bees, only the Sphingid caterpillar has been indicated as "eaten in the past, but not now." As for the bees, [263] their honey still is part of the Seri diet. But with the availability of sugar, even this addiction dwindles.

- 825 Other than this I have been unable to discover
857 any uses whatever, except perhaps as playthings of little boys, with the usual torture in view. The Cicada is most significant of these, of which more later.

Pets

- 231 The only insect pet is a Cicada. This insect is usually tied to a long thread, its forewings partly clipped off and then released into the air like a kite. Local Mexicans also provide their own boys
● [71] with a similar kind of toy.

Hunting

- 222 Only bees are hunted. They are usually flushed out of the cave shelters in the mountains. The operation is accomplished without the use of smoke. The honey is cut out with a knife.

Taxonomy

- * 825 Seris' ideas of association of various insects are very loose. Few insects are recognized to form natural groupings; bees, butterflies, wasps, spiders are most distinct. However, there are all sorts of gradations blending confusedly with each other, often dependent on the knowledge and interest of particular informants.

Simple recognition is not always present. Out of 92 forms, 13 the informants could not identify, simply saying that they didn't know them. *Cicindela lemniscata*, *Melanotus cribricollis*, *Horistonotus*, *Meloid*, *Ozacia*, both species of *Cymatodera*, *Photopsis*, *Scolopsella*, tiny Scarab, *Leptoremus*, *Homolocorus*, and *Reduviid*—all these were in the

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*825 or toxic contrary to their genuine nature. When such contrasts exist, the beliefs cannot always be explained as a matter of the influence from the Mexican folklore. The reasons for this I discussed in the chapter on the reptiles and amphibians. The explanation for such beliefs depends mostly on additional field work. It is also interesting that in some of these instances (bat for example) there is a suggestion that the belief in the toxicity or other unpleasant traits not only is not associated with the Mexican folklore but is basically aboriginal, and it is on the way out among the younger men.

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Attitudes

* 825 With rare exceptions Seri attitudes toward
182 animals are remarkably sober, pragmatic and matter of fact. This is evident in how little folklore or irrational fear is connected with the animals. It all runs pretty much along the line of their generalized attitudes, world view and religion as suggested by other investigators (Kroeber 1930:4; This is also the opinion of Spicer, personal communication). Elements of mystery are almost completely absent and this is probably not entirely due to the disintegration of their religion and culture as Kroeber (*ibid*) thinks.

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* 825 In other ways, their attitude toward animals
● 171 ranges from indifference (adults) to downright deliberate cruelty (little boys). In this, the Seri boys differ markedly from the boys of some of the other groups I studied (Malkin 1958:89).

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181 have made themselves as comfortable as other tribes occupying an equivalent environment. That they did not, to the writer, indicates a lack of something vital in their mental makeup.

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171 The brief comparison we have made between primitive European
105 and Fuegian cultures shows that although the Fuegians had partly attained the technological plane called Neolithic in the Old World, nevertheless in most respects they were scarcely better off than the semi-simian Neanderthal man of Europe. Clearly then they were laggards or backsliders in the development of mankind, so that in depicting their manner of life we are justified in assuming that we are recreating a vista of life in Europe or elsewhere many thousands of years ago.

However, the tribes of Tierra del Fuego are not a unique phenomenon, as we shall show by comparison with an equally though differently untutored New World group.

Y ● 5 B.—FUEGIANS COMPARED WITH THE SERI

● 171 The Seri, who inhabit a barren territory on the eastern shore of
105 the Gulf of California and the adjacent islands, of which the largest is Tiburon, are one of the most primitive Indian tribes on the North American continent. Their climate is hot and dry. Their food supply is abundant—both marine and terrestrial. Like Fuegia the region occupied by the Seri is isolated from the main stream of cultural development, so that the native society probably represents a form of life much more wide-spread long ago.

^ Like the Fuegians, the Seri had no agriculture and no domestic animals except the dog, which indeed seems to have been half-wild. Their most important food was the turtle, which they caught with a harpoon having a detachable head tied to a cord. This may be compared to the Yahgan seal-spear. Long ago they used a two-headed barbed spear with the barbs facing inward to catch fish. The Yahgan also employed a two-headed fish-spear, but did not set the barbs inward. For boats the Seri made reed balsas with high pointed ends, a seaworthy craft but one which can be used only in warm climates because in rough weather the crew are drenched with spray or wet by water coming through the floor. These balsas the Seri propelled with clam-shells or boards held in the hands. In addition to spearing fish off-shore the Seri also caught them with their hands in shallow pools at low tide like the Ona, and they obtained on the beach large quantities of shellfish—chiefly clams and oysters.

FUEGIAN CULTURE STATUS

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On shore the Seri gathered various wild vegetal foods. They clubbed roosting pelicans at night. They caught also many deer and rabbits. We use the word caught advisedly, for usually the Seri, fleet of foot and hardy, ran these animals down and literally caught them in their hands. Meat was eaten raw except when there was an oversupply. Then it was partly cooked to tempt their jaded appetites. At times in hunting and regularly in war they employed a bow and arrows of simple type. The arrow had a wooden tip, rarely a chipped stone point.

For tools the Seri used a bone or a wooden awl, a wooden marline spike, a stone hammer and anvil, and a clam-shell. The latter served as a knife, but its shape was not modified, nor was it set in a handle. Manual dexterity was at a minimum among these people, and their implements and weapons were even more primitive than those of the Fuegians.

The fundamental Seri garment was a pelican-skin robe, which, like the Yahgan cape, was shifted from side to side with the wind in inclement weather. Also they wore at times a kilt and sleeved shirt of woven material, and thus they placed themselves on a higher cultural plane than the Fuegians, for they not only had acquired the art of weaving, but of tailoring their garments, neither of which were known to the Indians of Tierra del Fuego. In addition, the Seri wore a belt, often of snake-skin, and sometimes sandals of turtle-flippers. They adorned their persons with necklaces of seeds, of wooden beads, of shell, and of hair. They painted designs on the faces much more elaborate in character than those of the Ona and Yahgan.

Seri houses, scarcely better than the Ona windbreak, were arches of saplings partly shingled with sponges and turtle-shells. Inadequate even in a warm climate, yet they offered more protection comparatively than the Fuegian houses. As the Seri were constantly moving from place to place, these rude shelters were frequently abandoned to be reoccupied on some other occasion.

Of household furniture the chief article was a globular pottery water-jar, because water was scarce in Seriland and had to be transported long distances. A yucca ring-base was provided for the water-jar, and at times two jars were transported in nets slung on a shoulder yoke. In addition the Seri sometimes made a cooking-pot, an open dish, miniature vessels, and crude figurines; they also used a shell cup, and made simple coiled baskets. Their

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171 babies they carried on wooden frames like the Ona. Fire they
105 made with a drill.

From the above remarks it appears that other inhabitants of the New World lived on a technological plane different in detail but no higher than the natives of Tierra del Fuego. Indeed in many respects—notably the lack of a knife and a scraper—the Seri are the more primitive. Yet their need was not so great, because the climate they enjoyed did not make such demands on their vitality.

When we examine social institutions we find the Seri on a markedly higher plane than the Fuegians. The tribe as a whole had marked national consciousness. It was divided into exogamic totemic clans based on maternal descent. Authority was lodged in the matrons, delegated to the elder brother for such masculine occupations as war and hunting. Religious concepts and practices also were on a higher plane than in Tierra del Fuego.

On the whole then we may say that the Seri, like the Fuegians, were a marginal group representing an early cultural stream; that both peoples were markedly deficient in houses, tools, and accouterments; but that the Seri, being closer to the fringe of higher culture, had borrowed in rudimentary form such higher arts as pottery-making and weaving, and had become endowed with more advanced religious and social practices. In both cases it seems that, although migratory by nature, their peregrinations had been circumscribed within fixed limits with resultant cultural atrophy, so that centuries had passed with little modification in their form of life.

The status of very primitive groups like the Fuegians and the Seri has bearing on the unknown pioneers who settled the New World, for the simplest and crudest tribes of the present may reflect the condition of their primitive migratory ancestors. We shall examine then the evidence afforded by such backward groups to throw light on the time when the Americas were settled and on the nature of the culture that was first introduced.

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171 Boas,¹ Wissler,² Kroeber,³ and others have brought forward evidence that man reached the New World in a state of cultural development corresponding to the beginning of the Neolithic period in Europe. This hypothesis rests on fairly well assured

¹ The History of the American Race; *Annals N. Y. Acad. of Science*, XXI, 1912.

² The American Indian, New York, 1917.

³ American Culture and the Northwest Coast; *Amer. Anthr.*, n.s., XXV, no. 1. Also *Anthropology*, New York, 1923.